DEVELOPMENT AND TESTING OF A MODEL FOR NURSE INVOLVEMENT IN PULMONARY PATIENT EDUCATION

By

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In all humility
I dedicate this dissertation
to the Lord Jesus
for only through him
have I found my way.

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Chairman: James W. Hensel
Major Department: Curriculum and Instruction

This study was designed to develop and test a model for increasing hospital staff nurse involvement in pulmonary patient education. Included in the experimental program were (a) ten mini-modules, each one identifying a pulmonary patient problem and the important teaching points relative to that problem, (b) a set of patient handout materials related to the identified problems, (c) a resource file of supplementary information for the staff nurse, and (d) a self-instructional module on the principles of the educational process as applied in patient teaching.

The study used a Separate-Sample Pretest-Posttest Control Group Design. The investigation was conducted in a 550-bed medical center. The nursing staff of two general medicine units ($\underline{N} = 32$) participated in the study with one randomly selected unit receiving the treatment program and the other unit serving as the control. In addition to receiving the treatment materials, the nurses in the experimental unit underwent a two-hour orientation workshop. The control unit nurses received only a 15-minute orientation workshop on the importance of patient education, and they did not receive any resource materials.

Pretreatment and posttreatment data from two measurements of staff nurse teaching performance were collected from (a) pulmonary patient questionnaire scores ($\underline{N} = 100$) and (b) review of nurse-recorded teaching of the same pulmonary patient population. Comparisons by $\underline{t}$ test were made on the mean patient questionnaire scores for posttreatment experimental group versus pretreatment experimental group, pretreatment control group, and posttreatment control group. At an overall experiment-wise error rate of .15 (.05 level of significance for each contrast) a statistically significant difference was found for each comparison. A comparison of the relationship between the patient questionnaire scores and the nurse-recorded teaching found a correlation coefficient of $\underline{r} > .80$, showing a significant positive relationship between the two measures of the staff nurses' teaching performance. The investigator concluded that within the limitations of the study location and sample population, the model under study effectively increased the staff nurse's involvement in pulmonary patient teaching.

CHAPTER 1
INTRODUCTION

During the past 50 years a dramatic change has occurred in the pattern of health problems. Deaths from infectious disease have declined significantly while the incidence of chronic disease has increased more than 250% (Shirreffs, 1982). Individual life-style and health-related behavior are responsible for as many as half of the deaths in the United States, and health education is now recognized as vital to the improvement of individual and community health status (Green & Anderson, 1982; Health Policy Council Task Force Paper, 1980).

The changing pattern of health problems, which places new emphasis on education, is reflected in the recognition that education in self-care is vital for people with chronic and acute illness (U. S. Department of Health, Education and Welfare [USDHEW], 1979; U. S. Office of Health Information and Health Promotion, 1980). As a primary provider of health care for this population, the hospital is charged with responsibility for teaching self-care (American Hospital Association [AHA], 1977a, 1982). The hospital nurse is the medical professional with the greatest opportunity to implement an ongoing program of patient education, but there is little or no documentation of teaching by the hospital staff nurse (Corkadel & McGlashan, 1983; Murdaugh, 1980). A variety of reasons for this failure of the hospital staff nurse to play an active role in patient education are suggested in the literature (Jones, 1977; Murdaugh, 1980; Ulrich & Kelly, 1972). A problem clearly exists between the identified role of the hospital nurse in patient teaching and the actual situation.

Spiralling health care costs have accompanied this shift in the nature of health problems from prevention of infectious disease to management and control of chronic disease. Patient education has the potential for reducing costs by helping individuals to improve their self-care skills. Even so, hospital administrators continue to support a low-cost educational effort that perpetuates the discrepancy that exists between recommended patient education policy and actual practice (Corkadel & McGlashan, 1983; Squyres, 1983).

Much is written about the potential value of patient education: increased patient compliance with a prescribed regimen, improved individual and community health status, decreased hospitalizations and emergency room visits, improved patient quality-of-life, reduced expenditure for health care, and improved patient self-management of acute and chronic illness (Shirreffs, 1982, Smolensky, 1982; Squyres, 1983). The value and importance of patient teaching are well documented in the literature. In spite of this predominant view that individual health status can be improved through patient education, consistent patient teaching is not being accomplished by the hospital staff nurse (Corkadel & McGlashan, 1983; Murdaugh, 1980; Squyres, 1980).

The hospital nurse has the greatest opportunity of any health professional to implement patient teaching. The contact of the hospital floor nurse with the patient is continuous and extensive. Statements published by a broad spectrum of professional organizations emphasize the nurse's role as a patient educator (AHA, 1979b; National League for Nursing [NLN], 1976). Even so, hospital nurses do little actual patient teaching (Corkadel & McGlashan, 1983).

In 1977, the AHA developed a series of patient teaching manuals and other patient education resources (AHA, 1979a). A Staff Manual for Teaching Patients About Chronic Obstructive Pulmonary Diseases was one of those resources. In late 1978 the American Lung Association of Florida (formerly the Florida Lung Association) received a grant to study the use of the manual in the field. The investigator of this current study served as project director and principal investigator on that grant. The model developed for this current research originated from that 1978 experience, and it was designed specifically to deal with the barriers to patient education that were identified in both the AHA project and the literature.

The federal government spends more than 12% of the American tax dollar on health care (Smolensky, 1982). This high cost is accompanied by two major trends, a preoccupation with consumerism and self-care and a public disenchantment with large institutions, such as hospitals (Brown, 1983; Naisbitt, 1982). Smolensky (1982) suggests a more effective use of existing manpower as one possible way to reduce public criticism of hospitals without adding measurably to costs. This position is supported by the AHA (1978) recommendation that steps be taken to enable those health professionals already present in the medical care setting to identify and use their frequent times of patient contact as teaching opportunities. The general staff nurse exemplifies one such health professional.

Background of the Problem

Value of Health Education

Health education offers a high potential for prevention and control of illness and reduction of health care costs (Green & Anderson, 1982, Shirreffs, 1982). A growing social consensus favoring prevention activities is emerging in the United States. A report from the USDHEW (1978) states the following:

> This consensus has been reflected in a series of important publications--for example, A New Perspective on the Health of Canadians (1974), sponsored by the Government of Canada; Preventive Medicine U.S.A. (1975), cosponsored by HEW's National Institutes of Health and the American College of Preventive Medicine, and Perspectives on Disease Prevention and Health Promotion (1976), an Institute of Medicine document. The President, the Secretary, and the Assistant Secretary for Health and Surgeon General have strongly endorsed prevention. (p. 1)

Prevention is traditionally subdivided as primary, secondary, and tertiary. The goal of primary prevention is prevention of the onset of illness or disease. Secondary prevention is defined as activities undertaken in the early stages of disease detection but before the disease is symptomatic. Tertiary prevention is undertaken when a disease or illness is symptomatic and the goal is to arrest the disease or to prevent progression of disability and complications (USDHEW, 1978). At any one of these levels, a major goal of prevention is to influence voluntary positive health behavior (Green, Krueter, Deeds, & Partridge, 1980; USDHEW, 1978). The value of health education in influencing positive health behavior is documented in the literature (Green & Anderson, 1982; Patient education updates, 1983).

Patient education is health education for a specific population with illness or disease. The majority of patient education activities fit in the context of tertiary prevention. In an official policy statement of the AHA (1977b, 1982) patient education was identified as an integral part of patient care, and hospital staff was charged with the responsibility for teaching patients and documenting patient outcomes that occur as a result of patient teaching activities.

Research supports the claim that patient education can reduce health care costs through decreased hospitalizations and emergency episodes (Levy, 1979; Sackett & Haynes, 1976; Smolensky, 1982). According to a report from the Centers for Disease Control in Atlanta, the 533 persons who participated in the Maine Diabetes Control Project were hospitalized 33% less often than during the year prior to involvement in that educational program (News capsules, 1983). The report claims a saving of $203,771 in health care costs as a result of the program.

Patient Education Responsibility

The AHA (1982) states that the responsibility of the hospital for providing patient education services is "an integral part of high-quality, cost effective care" (p. 1). In conjunction with this statement the AHA reports research documentation of the effectiveness of planned, coordinated patient education in improved patient outcomes, such as the patients' increased ability to manage their chronic illness and a reduced number of hospital readmissions for chronic disease management. Unfortunately, even though hospital inpatient education is agreed upon as integral to patient care, third-party-payer insurance reimbursement for the cost of providing patient education is not generally allowable as billed separate charges (AHA, 1982). This restriction limits monies the hospital can provide for additional teaching staff, services, and materials. The hospital relies in large part on the existing medical staff to assume a responsible role in education (Squyres, 1983).

The medical treatment setting is in a unique position of opportunity for providing self-care information, but according to the USDHEW (1978) the medical treatment setting is not adequately used for that purpose. The extent to which this situation alters in the future may depend on the extent to which medical care providers give priority to staff preparation for teaching and to the patients' right to participate in the self-care management of their disease.

Among the professional medical staff, the nurse has the greatest opportunity for patient teaching. The nurse is not only knowledgeable about the diagnosis and medical regimen but is also in a position to assess the patient's understanding and acceptance of the health problem. The importance of the nurse's patient teaching role is documented by the American Nurses Association, the Joint Commission on Accreditation of Hospitals, and the National League for Nursing (AHA, 1979b). Milazzo (1980) points to the need for actualizing the nurse's role in teaching and states, "when creative teaching is utilized, nursing then enhances man's power to change himself" (p. 1079). The nursing profession identifies patient education as an essential function, and this is evidenced by professional organization statements, nursing texts, and nursing practice standards. However, Pohl (1978) reveals confusion among nurses as to their role and preparation as educators, and Ulrich and Kelly (1972) report that nurses are not comfortable with their knowledge of the teaching-learning principles.

In spite of an ample opportunity for patient contact, there is little or no evidence that the staff nurse is actively involved in patient education (Corkadel & McGlashan, 1983; Jones, 1977; Murdaugh, 1980; Redman, 1971). The primary reasons cited for this lack of actual patient teaching by nurses are (a) inadequate knowledge of the principles of teaching and learning, (b) lack of time for patient teaching, (c) inconsistent and nonstandardized procedures for patient teaching, (d) insufficient evidence that patient teaching is of high administrative priority, and (e) complexity of information acceptable for the patient.

The Chronic Obstructive Pulmonary Disease Patient

A leading cause of social security disability is chronic obstructive pulmonary disease (COPD). The primary diseases included under this classification are emphysema, chronic bronchitis, and asthma. Estimates of the prevalence of COPD are probably low since the disease is not always listed on the death certificate even when it is the contributing cause of death (USDHEW, 1978). The progression of most of the diseases encompassed by the term COPD is irreversible, but multifactorial problems are relevant to the disabling effects of the disease and to the incidence of acute episodes of respiratory distress which require emergency room treatment or hospitalization. Many of these problems can be reduced through patient understanding and compliance with a therapeutical regimen (Daughton, Fix, & Kass, 1979; Petty, 1975). The COPD patient represents a population in need of understanding and skill relative to participation in a preventive health care plan. This patient is a prime candidate for a hospital-initiated patient education program (Daughton et al., 1979).

Problem Statement

The problem identified for study was the hospital staff nurses' lack of active involvement in patient teaching even though their educational role was professionally identified. Planned patient education in our medical institutions is being carried out in a haphazard fashion rather than as an integral part of the system (NLN, 1976). When nurses are asked if they do patient teaching, the response may be in the affirmative, but little or no evidence supports this claim (Cohen, 1981; Corkadel & McGlashan, 1983; Whitehouse, 1979).

Among the health professions, nursing is often identified as responsible for taking a leadership role in patient education. Patient teaching is a professional responsibility of nursing, and according to the NLN (1976) "most nurses in an institution should be involved in patient teaching" (p. 5). The teaching role is also defined by the AHA and other professional nursing organizations, but evidence points to a discrepancy between policy and practice (AHA, 1979b; Fuhrer & Bernstein, 1976; Jones, 1977).

Patient education is recognized as having the potential for reducing spiralling health care costs, particularly among chronically ill patients, and for improving patients' quality of life (AHA, 1977a). The belief that patients have a right to actively participate in their own health care programs is now generally accepted by the medical professions (Barry, Pezzulo, Beery, Defreese, & Allen, 1979). Even so, education within the hospital setting is fragmented and often incidental (Milazzo, 1980; Squyres, 1983).

In summary, (a) patient education within the hospital setting has demonstrated value to the patient and the community, (b) the role of the staff nurse as a patient teacher has wide acceptance among health care professionals, and (c) in actual fact, only fragmented or incidental patient teaching is being implemented by the general staff nurse. A discrepancy exists between recommended procedure and practice in the patient education role of the hospital staff nurse.

Purpose of the Study

The purpose of this study was to develop and test a model for hospital staff nurse involvement in pulmonary patient education. The model employed a problem-solving approach consistent with nursing process and a nursing care-plan based on a problem diagnosis. Included in the experimental program were five components: (a) ten mini-modules that identified a patient problem, an immediate nursing action and the important points to be taught; (b) a set of patient handout materials related to each of the teaching modules; (c) a resource file of supplementary information for the nurse; (d) an orientation workshop for the staff nurse; and (e) a self-instruction module on the principles of teaching and learning as applied in patient education.

The goal of the research study was to determine the effectiveness of the experimental program in increasing nurses' participation in patient education. Research evidence has pointed to teaching interventions as valuable in helping the chronically ill patient to maintain a preventive practices program and carry out a prescribed medical regimen (Green & Anderson, 1982; Shirreffs, 1982). This, in turn, can result in enhancement of the patient's well-being and in reduction of health care costs through promotion of the patient's capacity for self-care.

The experimental program of this study was designed to eliminate or reduce a number of identified barriers to effective inpatient education in the hospital setting. The teaching points defined for the nurse to cover with each patient were brief, concise, and simplistic and were approved by the medical staff of the hospital. Each of ten mini-modules was written to address a specific patient need or problem. This problem-solving approach was planned to be consistent with the problem approach of nursing-process. The brevity of each intervention allowed more effective use of "teachable moments" available to the staff nurse. The direct applicability and meaningfulness of the information provided were intended to increase the motivation of both the nurse and the patient (Knowles, 1978).

Hypotheses

This study was designed to develop and test a model for increasing nurse involvement in patient education as evaluated by assessment of the nurse's teaching performance. The hypotheses tested were as follows:

1. There will be a statistically significant difference in mean scores from the patient questionnaires on nurses' teaching performance between the experimental program group and the control group, and the difference will favor the posttreatment experimental group.
2. Scores from a patient questionnaire on nurses' teaching performance will correlate positively with the nurses' recorded reports of patient education interventions.

Scope and Delimitations

1. Participation in the research was limited to those staff nurses assigned to one of two selected general medicine units at a 550-bed general hospital in Jacksonville, Florida. Each unit consisted of 16 nurses. One unit

was designated as the experimental group, the other the control group. Random selection and random assignment was not possible in the hospital setting. The experimental unit was randomly designated by a coin toss.

2. The patient sample was drawn from diagnosed chronic obstructive lung disease patients assigned to the two selected nursing units. The selected sample of 25 preexperiment and 25 postexperiment subjects from each of the two nursing units was determined in order of admission to the unit. Patients readmitted during the experimental period were not included.
3. The investigator gathered patient-questionnaire data on the patients' fifth day of hospitalization. The investigator developed the questionnaire instrument used for data collection.
4. The investigator conducted a two-hour orientation for all of the nurses assigned to the hospital unit selected as the experimental group ($\underline{N} = 16$). The experimental program began on the day following completion of the orientation workshop. Nurses working in the unit on temporary assignment did not receive orientation, and no effort was made to gather data on the patient teaching performance of individual nurses.

5. The investigator directed nurses in both control and experimental groups to record each patient teaching intervention using the same standardized procedure. The control unit nurses did not receive orientation or materials from the experimental program, but they were informed that the researcher was present to gather data on the chronic lung disease patient's educational needs and the degree to which these needs are routinely met.
6. The study was conducted in the natural setting of the general hospital with the advantage of demonstrating practical applicability and with the disadvantages of limited control of variables, unrandomized selection of subjects, and restricted generalizability of findings.

Definition of Terms

The following terms are defined below as they are used in this research study.

Patient education or patient teaching--Used interchangeably to mean health education designed for populations with specific illness or disease.

Health education--A process of coordination and integration of health messages that enables persons to make and act upon informed decisions about matters affecting their health.

Health teaching or health instruction--Used interchangeably to mean effective transmission of knowledge and skills relative to health.

Prevention--Measures undertaken to prevent the onset of illness, to reverse or slow the progression of disease, or to control symptoms and reduce the complications of disease.

Self-care or self-help--Used interchangeably to mean those practices actively undertaken by an individual in support of preventive health care and enhanced physical well-being.

Health promotion--Any combination of health education and related organizational, social, economic, or environmental controls designed to facilitate changes conducive to health.

Chronic obstructive lung disease (COPD)--The respiratory ailments characterized by chronic obstruction to or restriction of airflow and including chronic bronchitis, pulmonary emphysema, and bronchial asthma.

Patient--Any individual, 18 years of age or older, hospitalized at the institution used as a site for this research study.

Staff nurse or floor nurse--Used interchangeably to mean any nurse, either registered nurse or licensed practical nurse, assigned to the general nursing service in a hospital floor unit for medical care of patients.

Intervention--A specific nursing action taken to solve or modify a patient problem situation.

Continuing education--A formal adult education program, provided subsequent to completion of minimum training requirements, and designed to keep professionals updated on new developments in their field or to provide additional training and information.

CHAPTER 2
REVIEW OF LITERATURE

Progress in medicine and technology has reduced mortality from infectious disease and has raised the life expectancy in the United States from 40 to 45 years in 1900 to approximately 73 years in 1983. Analysis of the leading causes of death today indicates that approximately 50% of all deaths in the United States are the result of a chosen lifestyle of unhealthy behaviors (USDHEW, 1979). Chronic disease is a primary medical-care problem in America today and is defined by the Commission of Chronic Disease as "any impairment . . . that . . . has one or more of the following characteristics: is permanent; leaves residual disability; is caused by nonreversible pathological alteration; requires special training of the patient for rehabilitation; or may be expected to require a long period of supervision, observation or care" (Smolensky, 1982, p. 269). The chronically ill consume a large percentage of physicians' and nurses' time, occupying more than half of the hospital beds and contributing significantly to the rising costs of medical care. Increasingly, health professionals are convinced that further improvement in the health of Americans calls for a commitment to disease prevention and health promotion rather than increased medical care and health expenditure (USDHEW, 1979). Most of the controllable health problems in the Western society relate to personal habits. To bring about change in health status, health professionals must develop and implement strategies that promote the individual's adoption of healthy life styles (W. K. Kellog Foundation, 1980). If society hopes to reduce the ever-increasing burden of health care costs, it needs to give priority to measures for improved preventive health services. Education has the potential for influencing positive health behavior (Green et al., 1980). The failure of insurance reimbursement to directly cover the costs of patient education has interfered with development of effective programs and has earmarked the patient teaching effort for failure (Squyres, 1983). Health professionals agree that preventive measures appear to be the key to reducing the onset and progression of chronic disease and the resulting disabilities. Prevention, however, takes many forms ranging from comprehensive school health education, to screening for early detection, to educating chronically ill patients in ways to reduce impairment. The focus of this study was with the latter, patient education, as an integral part of the health care delivery setting.

Value of Health Education

Health education has been variously defined. One definition explaining it as contributing to public health is "a process that enables people, acting individually and collectively, to make and act upon informed decisions about matters affecting their personal, family and community health" (Henderson, 1982, p. 14). This definition, as well as others, points to health education as the bridge between health information and health practice. Patient health education merely identifies one of the target populations for a health education effort.

According to the AHA (1979b), the hospital should provide a comprehensive patient education program which will enable patients to make informed decisions and contribute to the management of their illness. If such an endeavor is to be successful, it must be an integrated part of patient care. Health professionals recognize the need for integrated patient education, but, in fact, current practice is fragmented and varies widely (Hefferin, 1977). Further, although officials of the Blue Cross and Blue Shield Assocation have expressed favor of patient education in a white paper, standards for payment of health education have not yet been developed (McNerney, 1975). In support of the value of education, the American Public Health Association, at its annual meeting in November, 1982, passed a resolution calling for third-party-payer reimbursement for patient education services ("Reimbursement," 1983).

The net effect of any program of health education is difficult to measure, but a comprehensive program has the potential for increasing patient compliance, reducing drug use, decreasing hospitalization, and contributing to an improved quality of life (Hefferin, 1977). A number of variables impinge on reaching this potential at an optimum level within the hospital setting. Medical professionals may not now be adequately trained as teachers and promoters of health (Cohen, 1981; Murdaugh, 1980). In addition, a variety of other barriers interfere with establishing a patient education program as an integral part of the hospital health care system (e.g., lack of time, standardization of content, low administrative priority) (Hefferin, 1977; Corkadel & McGlashan, 1983).

In recent years, research studies have provided increasing evidence of the value of health education. A large-scale study of hypertensive patients conducted by Moresky (1983) demonstrated that effective management of high blood pressure, when combined with an effective patient education program, reduced the death rate by 53.2%. An evaluation of a diabetic patient education program by Legge, Massey, Vena, and Reilly (1980) reported patient instruction was effective in influencing reduced hospital readmissions and decreased occurrence of diabetic ketoacidosis. The program tested was based on one-to-one instruction between the nurse educator and the patient. Studies of surgical patients have demonstrated that information given preoperatively reduces postoperative complications and postoperative pain, therefore decreasing the need for analgesia (Boore, 1978; Egbert, Battet, Welch, & Bartlett, 1974; Haywood, 1975).

The chronic obstructive lung disease patient has been frequently studied, and positive results have been demonstrated through application of a program of pulmonary rehabilitation that places emphasis on education (Daughton et al., 1979; Petty, 1975). Petty defined patient education as fundamental to successful management of chronic illness and cited the nurse or therapist as highly valuable to the teaching program. The American Thoracic Society (1981) outlined the components of pulmonary rehabiltation and stated that instruction of the patient and the family was essential for optimum compliance. Teaching the patient how to carry out the activities of daily living was identified as one of two principal objectives of pulmonary rehabilitation. The other objective was to control and alleviate symptoms, complications, and impairment, as much as possible.

Patients, particularly those with chronic disease, need adequate explanation to reinforce their compliance with the therapeutical regimen. Ryan and Boissoneau (1976) demonstrated that education increased patient cooperation with treatment. Mumford, Schlesinger, and Glass (1981) also reported encouraging results on patient education as effecting reduced length of hospital stay. An exploratory study by Tanner and Noury (1981) showed the effectiveness of formal teaching in increasing knowledge about hypertension but failed to demonstrate resultant lowering of blood pressure readings. No effort to determine compliance with the medication regimen was presented. Hypertension is a chronic illness with little or no systemic disability, however, and is not typical of other chronic diseases. Research of the effectiveness of educational interventions in increasing adherence levels in hypertensive patients is sparse and adherence to hypertensive regimens is widely recognized as a problem (Caldwell, Cobb, Dowling, & Jongh, 1970; Haynes, Taylor, & Sackett, 1979).

The importance of health teaching in nursing was cited by the NLN as long ago as 1918, but only recently has there been an upsurge of interest (Schoenrich, 1974; Somers, 1976). The motivation for this increased interest may be due to a number of factors, including increased emphasis on disease prevention, rising incidence of chronic disease, increased longevity leading to a larger elderly population, and the success of behavioral change programs, such as Weight Watchers, in evidence in the past decade.

In summary, medical professionals are beginning to recognize the value of health education as a necessary and neglected element of the delivery of health care. The literature reveals that health education and patient education have demonstrated value in a reduction in health care costs, a decrease in acute illness episodes, an increase in patient capacity for self-care, and an improved patient quality of life.

Continuing Education for Nursing

Just as in all of the health care professions, the educational demands on nursing have changed dramatically over the past 50 years. The basic teaching programs have moved from the hospital setting to the postsecondary educational institution. In addition to graduating from an accredited program, the nurse must be licensed through a state regulatory board and is accountable to "society" for maintaining a safe level of practice. This demand for persistent expertise necessitates an ongoing or continuing education (Cooper, 1978). To enforce this requirement many states now mandate evidence of periodic continuing education for the renewal of the nursing license. Florida mandated continuing education in 1979, and at that time nursing relicensure was placed under the regulatory powers of the Florida State Board of Nursing.

The rationale for emphasizing continuing education is that nurses' learning experiences will ultimately benefit the patient population. The growing technology and information boom make it virtually impossible to cover all of the important material during initial training. Continuing education has broad acceptance as to its value, but mandated schooling in adult years is controversial (Cross, 1981). Coercion is counterproductive to adult learning, according to an organized opposition which emerged at the 1977 National Adult Education Conference. This opposition is supported by a study of Larocco and Polit (1978) which found only 15% of the nurses questioned supported mandatory continuing education. In the study Larocco and Polit also found a 95% approval of educational offerings through the place of employment. On the other side of this controversy Miller and Rea (1977) found that 70% of the nurses surveyed in a small study believed in mandatory continuing education as a professional step forward. Those not in agreement were predominantly diploma graduates working at the staff level. The issue, according to Houle (1980), was not whether knowledge and skill should be mandated but whether the professional was actually changing performance behavior as the result of continuing education. What was important was that continuing education did appear to have value in assisting professionals in maintaining a high level of practice.

The literature contains a number of studies on the continuing education of nurses. O'Connor (1981), in a research sample of 843 nurses, concluded that seven motivational reasons for participating in continuing education predominated: compliance with authority, social relationships, improved social welfare skills, professional advancement, professional knowledge, relief from routine, and acquisition of credentials. One problem defined by both Smith (1978) and Curran (1977) was a failure to correlate continuing education program offerings with assessed needs and therefore provide relevant learning experiences. Continuing education programs should allow for problem-solving opportunities and application to the work setting.

Evaluation of Continuing Education

Articles on continuing education in nursing are many and varied except in documentation of evaluation, particularly as to change in practice behavior. The predominant procedure has been one of accepting participants' self-evaluation (Blume & Deets, 1975; Knowles, 1969). Performance assessment has been primarily in measuring objective attainment in the cognitive domain (McCormick, 1973; McNally, 1972). In a 1980 study, Murdaugh compared cardiac patient knowledge scores where experimental group nurses had participated in a continuing education program on teaching-learning principles and control group nurses had not participated. A significant difference in patient scores led the researcher to conclude that nurses with teaching-learning knowledge were more effective in patient teaching. Blume and Deets (1975) in a review of the literature in continuing education evaluation found that ascertaining participants' impressions of strengths, weaknesses, and value was the primary direction of evaluation, although the ultimate goal of continuing education in nursing is to influence nurses' behavior. According to Lloyd and Abrahamson (1979) measurements of change have consisted primarily of measuring objective attainment with the pre-post test design in the knowledge area. In relation to patient health status, they concluded that continuing education has yet to be adequately tested.

In a review of continuing education research studies that used knowledge as a variable, Blume and Deets (1975) reported infrequent evaluation of the instrument used to collect the data. This was particularly critical in instances where change or gain scores were used, since the reliability of each test greatly influenced the gain score obtained by subtracting pretest score from posttest score. Even in the face of questionable reliability, measurement of knowledge gain is considered to be worthwhile, since knowledge is a predisposing factor in changing behavior (Green et al., 1980). An increase in knowledge may not cause behavior to change, but numerous studies support a positive relationship between the two variables.

Little has been done in evaluating the role of the affective or attitude domain in continuing education, although attitude theory reflects that change in attitude is usually preceded by new information (Galfo, 1975). The work of Kramer (1967, 1968, 1974) supports the hypothesis that a desirable attitude shift will enhance learning and actual use of the learning in the work setting. The relationship between attitude change and performance warrants investigation (Deets & Blume, 1977).

The evaluation of attitude as a positive or negative reaction toward an object, person, or situation may be appropriate in evaluation of continuing education. Attitudes are to some degree determinants of behavior (Green et al., 1980). To maintain a shift in attitude, however, the nurse needs to function or practice in the new role indicated (Kramer, 1974).

In Blume and Deets' study (1975) of 10 different continuing education offerings, both the Semantic Differential and the Likert-type scales were used in evaluation of attitude. A self-report instrument was used for assessment of performance with the participants responding as to frequency and confidence in their ability on a provided list of skills. In a report of conclusions consistent over the 10 offerings studied, Blume and Deets noted that there may be value in including attitude domain in the evaluation design but sufficient time must elapse in order for attitude change to be significant. In one of the continuing education offerings which they evaluated, significant difference in attitude change did not occur until the three-month delayed posttesting.

The effect of practice in the use of continuing education information, either during or after the offering, appears to increase the retention of knowledge, but according to Blume and Deets (1975) it was difficult to develop reliable knowledge instruments for measuring attainment of objectives. They also found low attitude reliability coefficients when using the Likert-type instruments and high reliability coefficients with the use of the Semantic Differential technique. Unfortunately, however, the participants expressed discomfort with the Semantic Differential instrument, and in several of the studies a number of the participants elected to complete neither the posttest nor the delayed posttest. According to Kerlinger (1973), one reason for low reliabilities on the Likert-type instrument was the difficulty of writing items that were about equal in attitude value.

delBueno (1977) found no significant behavior change in a 10-hospital study of the use of continuing education to increase the nurses' information-giving behavior in adult medical-surgical units. The researcher concluded that traditional education alone did not change on-the-job behavior; therefore, continuing education must be reinforced by reward, recognition, or control in the work site. A three-year evaluation by Donovan, Wolpert, and Yasko (1981) called for each participant to contract to reduce the gaps between actual and ideal nursing care as individually defined. On six-month follow-up, the researcher found a more positive attitude toward patient care but inconsistent success in fulfilling the contracts. Respondents cited problems with time and a lack of support as the primary reasons.

The literature reveals two typical methods for collecting data on nursing performance in practice: direct observation and self-report questionnaire response (Blume & Deets, 1975). Expense and rater reliability are problems inherent in doing observational studies of performance. Recent developments in ethnographic research provide more reliable instruments and procedures, but such studies in nursing behavior appear to be limited. Investigators using self-report instruments tend to ask for information on frequency of use or on the nurse's confidence in performing a specified skill or behavior. This technique must deal with the participant's desire to appear "good" or "please the instructor." Both of these human behavior phenomena are obstructions to the gathering of valid data.

The preferred design for evaluation of health education is the true experimental design consisting of (a) a representative sample of a target population, (b) pretest measures preceding the educational intervention, (c) a control group, unexposed to the educational intervention, (d) random assignment of the sample to experimental and control groups, and (e) posttest measures of the effects after the educational intervention. The fifth element, posttest or observation of educational effects, is essential to any evaluation. The first four elements can be compromised to an extent without a total loss of validity (Green & Gordon, 1982). The problem with complicated research designs is the unnatural circumstance of the experimentally controlled condition. What is gained in internal validity may sacrifice generalizability of findings.

In the past decade, impact and outcome measures have become major criteria for creditable evaluation (Mullen & Iverson, 1982). According to Mullen and Iverson (1982), however, qualitative evaluation plays a needed role in health education evaluation by providing the context of meanings in which to understand the quantitative findings. Popham (1982) made a distinction between health education research and health education evaluation. Researchers are reaching for a knowledge base of generalizable truths while evaluators are working to improve decision-making relative to specific programs or approaches. In either instance, a serious problem is in assigning unwarranted credibility to test results. A lack of credible assessment devices, particularly in the criterion-referenced area, has inhibited health education in the past (Popham, 1982).

Adults as Learners

The principles of adult learning have direct implication to any program of patient education: first, in development of the training program for the patient educator and, second, in the actual methods and strategies used in the patient teaching. The concept of andragogy is defined by Knowles (1975) as the "art and science of helping adults learn" (p. 19). Knowles (1970) recognized four important characteristics of the adult learner as follows: (a) perceives self as a self-directing personality, (b) has an accumulated experience reservoir which can facilitate learning, (c) reflects "readiness" to learn according to the developmental tasks of the current social role, and (d) is oriented to learning which has immediate applicability.

Most adult educators agree that adult learners are able to assume a high degree of responsibility for their learning and, therefore, instruction should be learner-centered (Cross, 1981; Kidd, 1973; Knowles, 1975).

According to Tarnow (1979) adult learners are goal directed and learning is facilitated by a problem-centered approach that has direct applicability. The adult learner is active rather than passive, and learning is increased in a climate of searching and probing. The very definition of nursing process in the context of problem solving makes the professional nurse comfortable with this mode of learning.

In an analysis of teaching models for nursing, Smith (1982) defined the direct and indirect situations and interactions in which the nurse-teacher and patient-learner were involved. The affective or feeling aspects were seen as (a) the nurse's attitude and job satisfaction and (b) the patient's ethnicity and life-satisfaction. Common goals, communication, and socialization were defined as key factors in the nurse-patient relationship. The interactions of the teacher and learner ultimately affect the adult teacher's ability to change behavior.

Aging is not a major handicap in learning until the age of 75 or later. Compensations for a decline in sight and hearing can generally be handled without excessive hardship. The time required for learning new things increases with age, however, and speed of response slows somewhat (Cross, 1981). The greatest problem with memory in older people occurs when the material to be learned is meaningless or complex. Distractions also interfere with learning, particularly with older adults. However, age is only one variable, and some individuals 70 years of age or older may be superior in learning performance to some 30-year-olds (Cross, 1981).

The top five methods of learning preferred by adults are lectures or classes, on-the-job training, short-term conferences or workshops, individual lessons, and discussion groups (Carp, Peterson, & Roelfs, 1974). The last four would appear to indicate more need for active forms of learning participation. In support of this supposition continuing education student studies reported by Cross (1981) showed vocational interests to be a primary motivation for learning. In summarizing findings in a number of studies of the motivational dimensions of adult learning, Cross (1981) noted that although only about one third of potential learners list personal satisfaction as their primary reason for learning, personal satisfaction was one of the reasons listed by 50% or more of respondents in all of the studies reviewed.

A number of perceived barriers to adult learning were identified from a national survey conducted by Carp et al. (1974). Cost, time, inconvenience, and factors related to fear of failure were most frequently cited. Lack of time was the second most frequently identified problem to participation in educational pursuits. This concurred with the survey respondents' frequently expressed preference for on-the-job training (Carp et al., 1974).

The Nurse as a Patient Educator

Both the American Nurses Association (U. S. Department of Health and Human Services [USDHHS], 1976) and the NLN (1976) define patient teaching as part of the professional responsibility of the nurse. The hospital nurse is in a unique position of repeated contact with the patient. This frequence of contact and professional credibility make the nurse an ideal member of the care team to initiate and reinforce patient education (Murdaugh, 1980; J. P. Smith, 1979). Health education has long been an aspect of patient care. Nurses and other care providers represent an extraordinary potential for expanding health education activities. The largest single category of health professionals in education is nursing (American Nurses Association, 1976). The nurse's responsibility for teaching as part of providing comprehensive health care is well documented in the literature (Bradley, 1983; Corkadel & McGlashan, 1983; Redman, 1971). Investigators, in a 1981 USDHHS study project, found the nurse as the most often cited professional carrying out health education.

Whitehouse (1979) reported, "patient education is a nursing priority and should be equated with the importance of a patient receiving his prescribed medication" (p. 1227). Squyres (1983) stated that patient education "must be closely linked to patient treatment to maintain continuity of care" (p. 2). A research project by Kirscht, Kirscht, and Rosenstock (1981) found the nurse to be a significant agent affecting patient adherence to medical regimen. This is particularly interesting since the study population was hypertensive patients, a group considered difficult to influence in respect to compliance (Caldwell et al., 1970; Haynes et al., 1979). Kirscht et al. (1981) recommended further investigation of the nurse's potential in improving the patient's medical regimen adherence. Compliance is important in the chronically ill patient, and failure to adhere to the therapeutic regimen frequently results in hospital admission (Youngren, 1981). Increased knowledge and compliance were demonstrated in a study by Youngren (1981) of a self-medication program taught by nurses at a Veterans' Administration Medical Center.

In spite of the consensus on patient teaching as an identified role of the nurse, a number of problems and obstacles interfere with the staff nurses' implementation of patient education (Cohen, 1981). Pohl (1978) reported that nurses felt confused regarding their role as teachers and did not consider themselves well prepared. In an in-depth survey of nurses' attitudes, the role of teacher placed 22nd in relative importance among 28 identified areas of nursing practice (Bradley, 1983). Jones (1977) reported poor evidence of teaching by the staff nurse as well as widely varied and inconsistently used methods of recording. This lack of patient teaching as integrated into the general nursing role was also affirmed by Fuhrer and Bernstein (1976).

One major cause of the failure of nurses to teach patients, as stated by nurses, was an inadequate understanding of the teaching-learning process (Murdaugh, 1980; Ulrich & Kelly, 1972). Murdaugh studied hospitalized cardiac patients and demonstrated a significant positive relationship between the nurses' knowledge of teaching-learning principles and the application of those principles in patient teaching. The study found evidence of patient knowledge gain even in a short period of time when the patients were taught by nurses participating in an experimental group course on "Introduction to Teaching-Learning Principles."

According to Pohl (1978) the majority of patient teaching by nursing was informal or spontaneous and unplanned although a formal, planned, and systematic approach yielded a greater knowledge gain. The advantages of the formal approach were demonstrated in a study by Milazzo (1980) who found that health learners who received formal teaching exhibited greater knowledge gain than those who received informal teaching.

Summary of Literature Review

The dramatic shift in health pattern from infectious disease predominance to problems of the chronically ill has brought about a new emphasis on health education and patient education as an approach to behavior-related illness. The value of education in health prevention has increasingly been documented through a variety of evaluative research. In spite of the increased interest evidenced in the literature, the actual growth of effective educational programs for patients has been limited. Hospitals have expressed administrative support for patient education but have failed to bring in sufficient additional staff to provide a comprehensive program. Insurance providers acknowledge the value of preventive patient education, but educational services are not yet identified as specifically covered reimbursable expense.

A variety of health professionals are active in planning, implementing, and evaluating patient education. Among those professionals, nurses are the most frequently identified as needing to play a primary role in patient teaching. Professional nursing organizations agree that teaching is an important role of the nurse. Even so, the literature reveals a number of barriers to effective patient education by the staff nurse. Consistently identified obstacles are (a) lack of time, (b) physician interference, (c) lack of teaching skill, (d) complexity of information to be conveyed to the patient, and (e) poor administrative support. A lack of standardization in recording patient education interventions makes retrieval of data and evaluation of current practice almost impossible.

Continuing education programs are generally accepted as valuable in providing an effective means of presenting new information to practicing professionals. Studies of the effectiveness of such programs in producing desired nursing behaviors are, however, limited. The literature contains evidence that continuing education can change nurses' attitudes and that a positive attitude change is reflected in positive modification of behavior.

Finally, in spite of the evidence that patient education is valued and recognized as a function of nursing practice, effective and consistent patient teaching is not being accomplished. The literature review would lead one to believe there is a need for development of a program or process of delivery that will, in fact, facilitate the involvement of the hospital staff nurse in patient education.

CHAPTER 3
DESIGN OF THE STUDY

The methodology for this research study encompassed two components, the development of a program for staff nursing use in patient teaching and the testing of the program to determine its effectiveness in changing the staff nurse's practice relative to patient education. The purpose of the research was to develop and test a specifically designed model for hospital staff nurse involvement in pulmonary patient education. Staff nurse involvement was tested by comparing the patient teaching interventions between an experimental unit and a control unit in a general hospital.

Development of the Treatment Program

The treatment program consisted of the following five components:

1. A two-hour continuing education workshop for orientation of staff nurses to the treatment program.

2. A self-instruction module for staff nurses on The Teaching-Learning Process in Patient Education.

3. Ten mini-modules that defined specific nursing actions and important teaching points designed for use

in an approach to a specific chronic lung disease patient problem.

4. A file of supplementary resource materials for the staff nurse, classified according to relationship with the identified mini-module problem diagnosis.

5. A file of resource materials for distribution (handout) to chronic obstructive lung disease patients, and classified according to relationship with identified mini-module problem diagnosis.

The investigator designed the experimental educational program to eliminate or reduce some of the identified barriers to patient education by the staff nurse. The problems of time constraints, complexity of information to be conveyed to the patient, physician interference, lack of teaching preparation, confusion as to teaching responsibility, and lack of standardized recording procedures reported by Corkadel and McGlashan (1983), Murdaugh (1980), Redman (1971), and Whitehouse (1979) were specifically addressed.

The orientation workshop (see Appendix A for agenda and objectives) was designed to prepare the nurses in the experimental group to participate in the treatment program. The agenda included information and discussion on the value of patient education and the importance of the staff nurse in the patient teaching role. Time was provided for the nurses to share concerns and discuss possible solutions to problems. The researcher conducted the workshop in a format as recommended by certain defined principles of adult learning. Three of the assumptions offered by Knowles (1970) about the adult learner were basic to the entire treatment program and were emphasized in the orientation workshop.

1. Adults perceive themselves as self-directed learners.

2. Adults have an experience base that can be a useful resource for new learning.

3. Adult learning is problem centered and adult learners prefer an immediate opportunity to apply newly learned knowledge and skills.

A fourth assumption of "readiness to learn" as oriented to the individual's developmental stage, according to Havighurst (1972), means that at some periods in life the individual's motivation to learn is "triggered." The wide range of age, experience, and social role diversity anticipated among the workshop participants precluded directing the preplanned agenda to take advantage of those teachable moments or transition phases referred to in the developmental research. Included in the agenda, however, was a brief discussion of motivation.

The researcher developed the instructional module, The Teaching-Learning Process in Patient Education, to be a self-contained program (see Appendix B). The focus, as suggested by Houston (1972), was directed to the learner, and specific performance objectives were defined. The purpose of the module was to enable the students to apply the knowledge and skills of the educational process to the role of the nurse as a patient educator.

The mini-modules were brief, and each one defined only the teaching points relative to a specific problem that the lung disease patient was likely to encounter (see Appendix C). In addition to providing key educational points, each of the mini-modules presented a list of immediate nursing actions to alleviate the problem. Both the teaching information and the immediate actions were developed through consultation with selected medical specialists (see Appendix D). Controversial and questionable actions and information were omitted. Reproduced on four-by-six-inch file cards, the mini-modules offered a convenient referral system to be readily accessible at the nurses' station or carried in the uniform pocket. The teaching points did not provide an in-depth coverage of chronic obstructive lung disease. They did, however, provide information basic to the COPD patients' ability to manage their own care.

The resource file of supplementary information for the nurse was taken primarily from the Staff Manual for Teaching Patients About Chronic Obstructive Pulmonary Disease (AHA, 1979c). Rapidly increasing medical information and technology make it impossible for the generalist staff nurse to maintain an updated knowledge base on the many chronic and acute diseases. Easy accessibility to the latest information relative to the chronic lung disease patient was considered important to keep the nurse comfortable in teaching.

The resource file of handout material for the patient was taken primarily from an American Lung Association (1982) publication, Help Yourself to Better Breathing. The American Thoracic Society has approved this information. In addition, a selected panel of medical and educational experts (see Appendix D) has reviewed all of the educational materials.

Research Methodology

Following completion of the development of the model for involvement of the hospital staff nurse in pulmonary patient education, the researcher studied the effectiveness of the model in increasing the number of pulmonary patient education interventions performed by the staff nurse. The researcher endeavored to answer the following question:

> Will the number of patient teaching interventions by the staff nurse increase significantly after participation in the experimental program?

In order to answer this question the investigator employed a separate-sample pretest-posttest control group design (Campbell & Stanley, 1976) in the naturalistic setting of the hospital. The treatment variable was the experimental educational program which was introduced only to the treatment group. The second group, which served as the control group, did not participate in the experimental program. The nurses in the control group met with the investigator and were advised that (a) they were participating in a chronic lung disease patient education study, (b) it was important to teach patients in each of the 10 identified problem areas, and (c) their teaching interventions should be documented according to a defined system of recording procedure. Both groups were asked to make every effort to record all teaching interventions using the same defined procedure.

Staff Nurse Sample

The total staff nurse sample included all floor nurses assigned to each of two selected general medical units in the research-site hospital, a 550-bed general medical center in Jacksonville, Florida. The nurses in the experimental unit (n = 16) received orientation and all material comprising the experimental educational program. The nurses in the second unit (n = 16) served as the control group of the study. The experimental (treatment) group nurses were fully informed as to the educational program and its purpose. The control group nurses were informed that the researcher was a doctoral candidate studying the pulmonary patient's educational needs. Both units were advised of standardized recording methods and encouraged to teach in the 10 defined problem areas. The entire nursing staff of the two units participated in the study; therefore, random selection and random assignment were not possible. Selection of the experimental group was done by a coin toss. The nurse sample remained the same in each unit both pre- and post-treatment.

Patient Sample

The patient population consisted of diagnosed chronic obstructive lung disease patients who were admitted to the two selected hospital units during the period of this study. The Admissions Department of the hospital assigned patients onto the two selected units as vacancies occurred and with no discrimination between the units. The naturalistic situation precluded random assignment of patient sample.

Prior to the implementation of the experimental program, the investigator interviewed 25 patients on each unit (n = 50), using the patient questionnaire on "Staff Nurse Teaching Performance" (see Appendix E). Upon completion of the experimental program, the investigator interviewed 25 different patients in each unit (n = 50). All patient sample interviews (N = 100), both pretreatment and post-treatment, were administered on the patient's fifth day of hospitalization in order to allow approximately the same amount of time for nurse-teaching to occur. Patients who were discharged before five days of hospitalization and patients who were readmitted during the study period were omitted from the sample population.

Instruments

One outcome (dependent) variable in this study consisted of scores taken from a patient questionnaire specifically designed for the study. These scores represented the patients' reports on the amount of teaching done by the staff nurses in their respective units. The patient questionnaire (see Appendix E) was developed by the investigator to measure the nurses' teaching as perceived by the patient. The 40-item instrument (questionnaire) consisted of four specific questions in each of the ten patient education problem areas covered in the experimental treatment program. Each affirmative answer was scored as one point. The maximum possible score for an individual was 40 points and the minimum possible score was zero. Sample items from this questionnaire are

1. Since being in the hospital has a nurse
    - (a) explained the need to relax and slow breath to get stale air out of your lungs?
    - (b) shown you how to belly-breathe or do what is often called diaphragmatic breathing?

A panel of selected experts (see Appendix D), after critical systematic examination, attested to content validity of the instrument (questionnaire). The panel examined three factors: (a) the representation of the content of the program information on the questionnaire, (b) the adequacy of the questionnaire in covering the content in proportion to the content coverage in the program, and (c) the appropriateness of the questionnaire for the respondent (patient).

Since hospital practice calls for all nursing interventions, including patient teaching, to be reported in writing on nursing records, data were also collected on this second measure of nurses' teaching performance. The investigator reviewed the medical records of each patient in the total sample ($\underline{N}$ = 100) and counted the number of nurse-recorded teaching interventions through the first five days of hospitalization. The count was made pretreatment and posttreatment in both the experimental and control groups. Each intervention recorded was classified into one of 10 predetermined problem diagnosis categories. The 10 problem categories coincided with the 10 mini-module problem diagnoses represented in both the treatment program and the patient questionnaire. The nurse-recorded data and the patient questionnaire data were compared to determine if a positive relationship existed that would demonstrate the validity of the patient questionnaire data as a measure of nurses' teaching performance.

Research Design and Data Collection Procedures

Data collection for the purpose of analysis was begun on August 1, 1983, and completed on November 15, 1983. The investigation, including the six-week period of preliminary study, was completed in approximately five months. Data were collected (through the patient questionnaire and the review of medical records) on 25 patients from the experimental unit prior to the treatment intervention (time 1) and on another 25 patients from the experimental unit after treatment intervention (time 2). As a control measure, similar data were collected on 25 patients in the control unit at time 1 and on another 25 patients at time 2. For all patients data were collected on their fifth day of hospitalization.

This separate-sample pretest-posttest design (Campbell & Stanley, 1976) can be diagrammed as follows:

	Pretreatment		Posttreatment
Experimental	0_1	X	0_2
Control	0_3		0_4

Analysis Procedures

The null hypotheses tested in the statistical analysis were as follows:

1. There is no statistically significant difference between the mean patient questionnaire score for patients in the posttreatment experimental group and (a) the mean patient questionnaire score for patients in the pretreatment experimental group, (b) the mean patient questionnaire score for patients in the pretreatment control group, and (c) the mean patient questionnaire score for patients in the posttreatment control group.

2. There is no significant positive relationship between patient questionnaire data and nurse-recorded teaching data.

The first hypothesis was tested through a set of planned contrasts; specifically: (a) H_o: $\mu_2 = \mu_1$, (b) H_o: $\mu_2 = \mu_3$, and (c) H_o: $\mu_2 = \mu_4$. A t distribution was used for testing the significance of difference between means for independent samples in hypothesis one. The .05 level of significance was applied in rejecting or failing to reject each comparison. Thus, the overall experimenwise error rate for these comparisons was $< .15$.

Hypothesis two, that no positive relationship existed between the patient questionnaire scores and the nurse-recorded teaching data, was tested using the Pearson correlation coefficient. This relationship was tested to provide data on the validity of the patient questionnaire scores as a measure of nurses' teaching performance.

Design Validity

The separate-sample pretest-posttest control group design uses comparable groups but the same specific persons were not retested. This avoided the possible interaction of testing and the treatment variable but opened the possibility of mistaking some local happening in the experimental group for a treatment effect. Although the natural setting of the study did not permit full control or randomization, according to Campbell and Stanley (1976) this design carried a high rating for both internal and external validity.

Campbell and Stanley (1976) report the quasi-experimental design used in this study as advantageous in those situations where generalizability to other similar settings was desirable. Studies conducted in the naturalistic setting have a generally superior level of external validity.

Nurse Participant Evaluations

In order to receive evaluative information from the nurses who participated in the study, the investigator developed a follow-up questionnaire which was completed by the nurses in both groups (see Appendix F). Both groups were asked to give their perceptions of the situation in pulmonary patient education. These perceptions included a rank order of the five predominant pulmonary patient problems, teaching areas of difficulty, and barriers to patient teaching. The nurses were also asked to evaluate their own patient teaching performance. These evaluation questions were concerned with both the number of teaching interventions performed and the quality of the patient teaching.

In addition, the nurses who participated in the treatment program were asked to respond to questions on their assessment of the value of the experimental model. In this section of the evaluation questionnaire separate ratings on each of the five components of the model were solicited.

Preliminary Study

Prior to starting data collecting, the investigator conducted a preliminary study of the patient questionnaire and the nurses' use of the mini-module. In this pilot study of the questionnaire the investigator identified 10 diagnosed chronic lung disease patients. The investigator identified them at the study site through a review of nursing station records. She interviewed these patients using the patient questionnaire developed for this study. As a result of this preliminary use of the questionnaire, she made minor revisions to remove areas of difficulty for the respondents.

The investigator also pilot tested the mini-module cards developed for use by the hospital staff nurse. She conducted this preliminary study in one of the three general medicine units in the site hospital. The investigator drew the selected unit from three slips of paper that were each labeled with the number of one of the nursing units, and the nurse in charge of the selected unit identified the four nurses to participate in the preliminary study. These nurses used the mini-module cards for four weeks and evaluated them on the arrangement of the information, the ease with which the cards could be handled, and the value of the format that related the information to a specific patient problem. The investigator did not ask them to evaluate the wording or content of the information provided. She conducted the preliminary study to identify any major problems or staff nurse resistance to the use of the cards that might interfere with the research investigation. The participating nurses expressed enthusiasm for the cards, in particular for the problem-directed approach to patient teaching. One participant suggested the use of a smaller size card, but this suggestion was not implemented because it would have necessitated a change in the content of each card, and that change was not practical at this time.

The preliminary study took approximately six weeks to complete. While the investigator was pretesting the questionnaire and mini-module cards, she reviewed medical records of previously hospitalized pulmonary patients. In a review of 227 bed-days on 16 patients hospitalized during the first four months of the year, she counted a total of nine nurse-recorded teaching interventions. This count supported reports in the literature that patient education was not being documented by the hospital staff nurse.

CHAPTER 4
PRESENTATION OF RESULTS

The purpose of this study was to develop and test a model for increasing hospital staff nurse involvement in pulmonary patient teaching. The effectiveness of the model was tested in two general medicine units of a 550-bed medical center with one unit receiving the model treatment program and the other comparable unit serving as a control. The nurses' teaching performance was measured, both before and after implementation of the treatment program, through data collected on two variables: (a) scores from a patient questionnaire administered by the investigator and (b) a review (inventory) of teaching interventions recorded in patients' medical records. The patient questionnaire data served as the dependent variable for statistical analysis. Data collected from the review of patient records was used to determine the validity of the patient questionnaire data as a measure of the nurses' teaching performance.

The null hypotheses tested were

1. There is no statistically significant difference between the mean patient questionnaire score for patients in the posttreatment experimental group and (a) the mean patient questionnaire score for patients in the pretreatment experimental group, (b) the mean patient questionnaire

score for patients in the pretreatment control group, and (c) the mean patient questionnaire score for patients in the posttreatment control group.

2. There is no significant positive relationship between patient questionnaire data and nurse-recorded teaching data.

Statistical Analysis

The pretreatment and posttreatment means, standard deviations, and variance found in analysis of the patient questionnaire data are presented in Table 1, for both the experimental and control groups. The mean pretreatment scores were .24 for the experimental group and .20 for the control group. The mean posttreatment scores were 1.04 for the experimental group and .48 for the control group. Each group showed a posttreatment gain in mean score.

Table 1

Means and Standard Deviations of Patient Questionnaire Data

	N	Mean	Standard Deviation	Variance
Group 1 (Exp., Pre)	25	.24	.44	.19
Group 2 (Exp., Post)	25	1.04	1.02	1.04
Group 3 (Control, Pre)	25	.20	.41	.17
Group 4 (Control, Post)	25	.48	.77	.59

The first null hypothesis was tested through a set of three planned comparisons using a t distribution to test the significance of difference for each of the three comparisons. The .05 level of significance was applied in rejecting or failing to reject each contrast. The results of this analysis are reported in Table 2. Because the alternate hypothesis was developed in favor of the posttreatment experimental group (group 2), the critical value of a one-tailed t = 1.68 was selected as appropriate.

Table 2

t Test Comparisons of the Mean Patient Questionnaire Scores

Comparison	Mean Difference	df	t
Posttreatment Experimental/ Pretreatment Experimental $(\mu_{0_2} = \mu_{0_1})$	+.80	48	3.60*
Posttreatment Experimental/ Pretreatment Control $(\mu_{0_2} = \mu_{0_3})$	+.84	48	3.83*
Posttreatment Experimental/ Posttreatment Control $(\mu_{0_2} = \mu_{0_4})$	+.56	48	2.20*

*$p < .05$

In the experimental group comparison of means between the posttreatment and pretreatment patient questionnaire scores found a t = 3.60. At the 95% confidence level and 48 degrees of freedom, critical t = 1.68; therefore, at the

.05 level of significance the first comparison (H_o: $\mu_2 = \mu_1$) is rejected. A comparison of the mean patient questionnaire scores between the posttreatment experimental group and the pretreatment control group found a $t = 3.83$ and between the posttreatment experimental group and the posttreatment control group found a $t = 2.20$. At the .05 level of significance these findings favor rejection of the null hypothesis for the second and third contrasts (H_o: $\mu_2 = \mu_3$ and H_o: $\mu_2 = \mu_4$). Taken altogether the rejection of these three contrasts offered substantial evidence of the treatment's effectiveness. Specifically, patients educated by nurses in the experimental unit, after the educational intervention, had significantly higher questionnaire scores than patients educated by the same nurses before the intervention. Furthermore, patients educated by nurses in the experimental unit, after intervention, scored significantly higher than patients educated by nurses in the control unit during the same time period.

The second null hypothesis was used to examine the relationship between the data collected on the dependent variable (the patient questionnaire scores) and the data collected from a review of nurse-recorded teaching interventions as reported in the patients' medical records was examined by computation of the Pearson correlation coefficients for pretest and posttest occasions (see Table 3). A correlation value of $r = .82$ was observed for the two variables prior to the experimental treatment (time 1) and

Table 3

Correlation Coefficient Comparisons Between Patient Questionnaire Scores and Data Collected from Review of Nurse-Recorded Teaching

	Patient Questionnaire Scores	
	Pretreatment Data	Posttreatment Data
Nurse-Recorded Data	0.81623 (0.0001)	0.80949 (0.0001)

an r = .81 was observed from data collected posttreatment (time 2). Both correlations were significantly greater than .00 (probabilities of occurrence substantially lower than alpha of .01). Therefore, there was substantial agreement between patient reports and nurses' reports of the incidence of instruction. This agreement represented an independent validation of the measure used as a dependent variable in this study.

Nurse Participation Evaluation Results

Each nursing participant was asked to rank order (a) the five predominant pulmonary patient problems, (b) the five patient problem areas most difficult to teach, and (c) the five primary barriers to hospital staff nurse patient teaching. All nurse participants agreed that shortness of breath was the primary pulmonary patient problem and that psychosocial problems were the most difficult problem areas in which to do patient teaching.

Smoking was the only other problem area defined by both the control and experimental group nurses as one of the top five pulmonary patient problems. The control group's ranking included psychosocial problems and insufficient activity or exercise. The experimental group nurses' ranking of primary pulmonary patient problems included ineffective airway clearance (cough) and lack of medications knowledge.

In addition to identification of psychosocial problems as the number one problem area in which to teach, both groups were in agreement on ranking diet and nutrition, medications information, smoking behavior, insufficient activity, and insomnia as problem areas of teaching difficulty. These areas were identified in rank order as listed. Table 4 provides summary data.

Summary data on identification of the primary barriers to hospital patient teaching by the staff nurse showed overall participant agreement. In rank order of importance as barriers to teaching, the experimental group identified lack of time, lack of teaching skills, no standardized procedures, and patient resistance and the control group identified lack of teaching skills, lack of time, patient resistance, and no standardized procedures. These data are reported in Table 5.

There was some general agreement among all of the nurse participants that their patient teaching had increased and improved in quality during the period of investigation.

Table 4

Experimental and Control Group Comparisons of Nurse-Participant Ranking of Primary Pulmonary Patient Problems and Areas of Teaching Difficulty

	Total Scores*			
Pulmonary Problems	Rating as a Primary Pulmonary Patient Problem		Rating as a Problem Area of Teaching Difficulty	
	Control	Experimental	Control	Experimental
Diet	0	5	35	56
Inhaler Use	12	4	2	9
Airway Clearance	19	36	11	18
Insomnia	2	10	25	18
Exercise	25	18	1	5
Medications Knowledge	1	26	31	21
Oxygen Use	4	25	10	5
Psychosocial Problems	58	12	57	54
Shortness of Breath	59	76	7	1
Smoking	30	26	29	20

*A score of 80 would result from a unanimous selection.

Table 5

Experimental and Control Group Comparison of Nurse-Participant Identification of Barriers to Patient Teaching

Barriers	Total Scores* Barriers to Patient Teaching	
	Experimental	Control
Physician Resistance	14	7
Lack of Time	70	44
No Standardized Procedures	33	34
Teaching Content	26	21
Patient Resistance	28	35
Teaching Skills	37	50
Low Administrative Priority	4	14

*A score of 80 would result from a unanimous selection.

Among the control group nurses (_n_ = 16) seven reported an improved quality of patient teaching and eight reported an increase in number of patient teaching interventions. In the treatment group (_n_ = 16) 14 reported an improved quality of teaching and 13 reported an increase in the number of patient teaching interventions.

The nurses in the experimental group rated the separate components of the treatment program as to their value to them on a scale ranging from _no help_ (1) to _very valuable_ (5). The mini-modules and the resource materials for both nurses and patients received no rating of less than a four (above average in value). The self-instructional module on the teaching-learning process received a rating of average in value (3) from three of the nurse participants and a rating of above average from the other (13) participating nurses. Two of the experimental unit nurses rated the orientation workshop as average in value. Of the remaining nurses nine scored the workshop as very valuable (5) and five scored it above average in value (4). If each of the 16 nurse participants had rated the model component at the maximum level of value of five points (rating scale 1-5), the total evaluation score would be 80 points. The mini-module cards received a total score of 78; the resource materials were evaluated at a score of 76; the self-instructional module received a total of 64 points; and the orientation workshop was evaluated at a score of 72. Summary data on the experimental group's evaluations of the program components are reported in Table 6.

The majority of the nurses from both the control and experimental units (N = 32) reported that they did not teach consistently and that when they did patient teaching they did not document the teaching consistently. In response to the question of their level of comfort in the teaching role only one nurse participant reported feeling uncomfortable in that role.

The testing of hypotheses was conducted on total data collected. However, the investigator recorded the teaching

Table 6

Experimental Group Nurses' Evaluation of Model Treatment Components

Model Component	Evaluation Rating*
Mini-module Cards	78
Resource Materials	76
Self-instructional Module on Teaching Process	64
Orientation Workshop	72

*A rating of 80 points represents a maximum score.

interventions according to the 10 identified problem subcategories as follows: shortness of breath, ineffective airway clearance, insomnia, incorrect inhaler use, incorrect diet, insufficient medications knowledge, smoking, physical inactivity, psychosocial problems such as depression or hostility, and insufficient knowledge about the use of oxygen. A number of the total patient sample (N = 100) did not receive any teaching as measured by either the patient questionnaire or the teaching interventions recorded in their medical records during the period of study. In the control group 20 patients in the pretreatment group (n = 25) and 16 patients in the posttreatment group (n = 25) were observed as receiving no teaching by the staff nurse. In the experimental group 18 patients in the pretreatment group ($\underline{n} = 25$) and 8 patients in the posttreatment group ($\underline{n} = 25$) received no teaching by the staff nurse.

The most frequently reported and recorded staff nurse teaching was done in the problem areas of shortness of breath, ineffective airway clearance, and use of medications. Not a single teaching intervention was reported or recorded in the problem area of sleep pattern disturbance, although numerous references were made to the problem in medical records and comments by the patients.

CHAPTER 5
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The value of patient education is documented in the literature, but there is little evidence that the staff nurse is teaching patients. This research study was undertaken to develop and test a model for increased involvement of hospital staff nurses in pulmonary patient education. The model comprised five components: (a) a set of 10 mini-module information cards, each directed to a specific pulmonary patient problem; (b) resource materials for the nurse's reference; (e) handout materials for distribution to patients; (d) a self-instructional module on the educational process as related to patient teaching; and (e) an orientation workshop for hospital staff nurses. Testing of the model was done through use of a separate-samples, pretest-posttest control group design. Statistical analysis procedures employed the t test and the Pearson correlation coefficient to test the null hypotheses.

The investigation was conducted in two general medicine units of a 550-bed medical center. This naturalistic setting did not allow for conduction of a pure experimental design study, but it provided conditions which were similar to the situation to which the study results would be generalized. The hospital setting, by virtue of its very nature, provides a dynamic and ever-changing environment for research. Working within the bureaucracy of a 550-bed medical center necessitates adherence to a protocol of procedures and approvals. A detailed report on the naturalistic setting of this study is presented in Appendix G in order to insure that no one considering replication of this study will underestimate the possible complexities.

The patient population consisted of 25 patients in each of four groups (N = 100), two pretreatment and two posttreatment groups. The patient population of the study was composed of diagnosed chronic lung disease patients. Their reasons for hospitalization varied, but by virtue of their disease their pulmonary problem needs were comparable.

The 16 nurses employed in each of the two hospital study units provided the nurse participant sample population (N = 32). No effort was made to study the teaching performance of any individual nurse. There was no attrition in either the experimental or control units during the investigation. The staff nurse sample in each unit (n = 16) remained the same throughout the five-month period of study.

Data from two measurements of staff nurse teaching performance were collected. The investigator reviewed the medical records of each patient in the study population and inventoried (tallied) each nurse-recorded teaching intervention. During the same period of time the investigator interviewed the patient sample (N = 100) using a questionnaire designed to measure the teaching done by the staff nurse. Data collected from patient questionnaire responses were used in testing of the null hypothesis that there was no statistically significant difference between the mean patient questionnaire score for patients in the posttreatment experimental group and (a) the mean patient questionnaire score for patients in the pretreatment experimental group, (b) the mean patient questionnaire score for patients in the pretreatment control group, and (c) the mean patient questionnaire score for patients in the posttreatment control group. The $\underline{t}$ distribution comparisons at the .05 level of significance for each contrast, with an overall experiment-wise error rate of .15, justified rejection of the hypothesis and offered substantial evidence of the treatment's effectiveness.

A second hypothesis that there was no significant positive relationship between the patient questionnaire scores (dependent variable) and the nurse-recorded teaching was tested with the Pearson $\underline{r}$. A pretreatment correlation value of $\underline{r} = .82$ and a posttreatment correlation value of $\underline{r} = .81$ rejected the second null hypothesis.

Pretreatment data collected from review of medical records and questionnaire information solicited from patient interviews found 38 of 50 patients studied did not receive any staff nurse teaching. Of this number, 20 untaught patients were in the control group and 18 untaught patients were in the experimental group. This lack of teaching occurred even though there were numerous recorded indications that the 10 pulmonary problems identified for teaching were well documented as existing. Posttreatment data disclosed that 26 of 50 patients studied received no teaching from staff nurses, but the untaught patients in the experimental group numbered 9 as compared with 17 untaught patients in the control group.

The nurses who participated in the study completed evaluation questionnaires relative to pulmonary patient education. Among the experimental group nurses, 87.5% perceived an improvement in the quality of their patient teaching during the investigation as compared with 43.7% of the control group nurses. In evaluation of their number of teaching interventions, 81% of the experimental group nurses and 50% of the control group nurses perceived an increase occurred during the study period.

All nurse participants were in general agreement that the four primary barriers to patient teaching were lack of time, inadequate teaching skills, lack of standardized procedures, and complexity of content. Patient resistance was also frequently cited as an obstacle to teaching.

The experimental group nurses were asked to evaluate the value of the treatment model in helping them to improve their patient teaching. Thirteen of the nurses evaluated the value of the model in the above average range. Three of the nurse participants rated the program and materials as average value in helping them improve their patient teaching.

Conclusions

This study supports the findings of other research reported in the literature that reflected a general lack of patient teaching by hospital staff nurses. Of the 50 patients interviewed prior to implementation of the experimental treatment, 76% received no teaching from the staff nurse. Since patient teaching is well defined as part of the staff nurse's role, this study supports the conclusion that a problem exists between the hospital nurses' defined role and their actual patient teaching performance. Since the value of patient education is also well documented in the research literature, a model for increasing hospital staff nurse teaching would be of value in the health care delivery system.

Seven reasons for the staff nurses' lack of active involvement in patient teaching were defined in the study's participant evaluation questionnaire. Nurses in the study identified four primary barriers to involvement in patient teaching: (a) lack of time; (b) inadequate educational skill; (c) inconsistent nonstandardized procedures, both for teaching and documentation; and (d) complexity of teaching content. These barriers to patient teaching were also identified in the literature. The conclusion of the investigator was that a model for increasing the patient teaching done by the hospital staff nurse must address these barriers before its use could anticipate any degree of success. The model developed and tested in this study was designed to address the primary barriers to staff nurse involvement in patient teaching. The defined teaching points were planned to be short and directed to a patient problem in order to encourage teaching as an integral part of nursing care and the nurses' daily contacts with patients. The model also related each teaching point to a shortened form of explanation that facilitated easier written documentation. In addressing the barrier of complexity of information, a resource file of single pages of information directed to specific teaching points was included. The resources were designed in two sets, one set of materials for patient handout and a second set for staff nurse reference. Finally, the experimental model addressed the nurses' lack of educational skill through a self-instructional module on the teaching process as it applied in patient education.

This investigation was initiated with the expectation that

1. The hospital staff nurse was not actively involved in a daily program of patient teaching.

2. A model could be developed to increase the staff nurses' involvement in patient teaching.

Within the scope and delimitations of this study it was concluded that the first expectation was correct. Two measurements of the staff nurses' involvement in patient education were used for data collection: (a) scores from a patient questionnaire designed by the investigator for the purposes of the study and (b) a review of nurse-recorded teaching as documented in patients' medical records. Pretreatment data disclosed that 76% (38 of 50 patients) of the patient sample received no staff nurse teaching during the first five days of hospitalization.

The investigator also concluded that the model under study effectively increased the staff nurses' involvement in pulmonary patient teaching within the study sample population. A statistical analysis of pretreatment and posttreatment means in an experimental and control group situation showed a significant difference between the patient questionnaire mean of the posttreatment experimental group and each of the other groups. The critical analysis relative to the treatment effect was the comparison of the posttreatment experimental group mean and the posttreatment control group mean. Statistically significant mean differences were found at the .05 level of significance in favor of the posttreatment experimental group when contrasted with the pretreatment experimental and the pre- and posttreatment control groups. This also supported the conclusion that within the scope of the study the treatment model had a significant positive effect on the staff nurses' teaching performance. Further, the conclusion that nursing performance can be measured by either patient questionnaire scores or a review of nurse-recorded teaching was evidenced by a positive correlation of $r \geqslant .80$ between the two measurements.

The data summarized from the nurse participant evaluations clearly presented the problem area of shortness of breath as the primary pulmonary patient problem. The predominance of this problem is further supported by the study data that showed shortness of breath as the problem area in which the greatest number of teaching interventions was reported and the teaching area in which the nurses were the most comfortable. The two next ranked problem areas were ineffective airway clearance (cough) and psychosocial disturbance (depression, hostility, etc.). It was not possible to draw further clear conclusions from these evaluations, but the data provided support to the conclusion that hospital staff nurses are (a) frequently uncomfortable in the patient teaching role and (b) amenable to participation in a program for increasing their patient teaching involvement.

Recommendations

A follow-up survey of the study population might be valuable in providing data to determine possible self-care differences between those patients who received teaching during their hospitalization and those who did not receive teaching. Such a follow-up study could provide comparison information on subsequent hospitalizations, emergency room visits and individual assessment reports on self-care skills.

The conclusion of positive treatment effect within the study situation and sample population leads the investigator to recommend replication of a like or similar investigation. The salutary nature of this study lends support to the recommendation of replication in that costs are minimal and the treatment is beneficial or health promoting. Replication would allow the investigator to draw stronger conclusions about the treatment effect.

In addition to recommending repetition of the same or a similar study, it is recommended that the key elements of the model be adapted for use with all hospitalized chronically ill patients. Although the model was developed for pulmonary patient education, the basic principles could be maintained in an expanded patient teaching program. These basic principles are as follows: (a) to address the problem of limited time by use of mini-module teaching cards, (b) to define the teaching points in terms of the related patient problem, (c) to standardize and keep to a minimum the recording procedures, and (d) to provide training in teaching skills, preferably by use of self-instructional or self-explanatory materials.

The following recommendations are made with regard to changes in the treatment model used in this study:

1. Reduce the orientation workshop time and make added provision for the nurses to role-play patient teaching and observe role-model teaching.

2. Revise the mini-module materials on medications, diet, insomnia, and psychosocial problems to be broadly applicable to any chronically ill patient.

3. Provide for some system of reward for the nurses who increase their involvement in patient teaching.

4. Develop guidelines for the hospital's nursing unit supervisors and patient education coordinators on their role in use of the model and in encouraging staff nurse involvement in patient teaching.

For the purposes of the study, the terms teaching and education were used interchangeably. This did not reflect a lack of understanding on the part of the investigator that there was considerable difference in definition of these terms. Improved patient education by the hospital staff nurse was the long-range goal of this research, but the immediate goal was an increase in the staff nurses' teaching performance. The need for this first step was based on evidence that staff nurses were not doing patient teaching and that until they were involved in teaching it was impossible to evaluate whether education was being accomplished. A final recommendation, therefore, is to do a follow-up study of those nurses involved in the first study in order to evaluate (a) continued teaching performance and (b) increased patient knowledge or improved patient compliance with medical regimen.

APPENDIX A
PULMONARY PATIENT EDUCATION ORIENTATION WORKSHOP AGENDA AND OBJECTIVES

"PULMONARY PATIENT EDUCATION" ORIENTATION WORKSHOP

AGENDA

I. Introduction and Program Overview

   A. Background information on 1978 American Hospital Association study

   B. Discussion of research study

   C. Nursing participation and patient sample

   D. Evaluation anonymity

II. Patient Education as a Part of Nursing Care

   A. Discussion of current situation: feelings, problems, methods of implementation

   B. Professional association support statements (AHA, 1977a, 1977b)

   C. Research evidence of the value of health education

   D. Discussion of teaching responsibility

III. Overcoming Barriers to Hospital Patient Education

   A. Definition of 5-6 primary barriers

   B. Discussion of possible solutions

   C. Film: "A Day in the Life of a Patient" (AHA, 1978)

   D. Discussion of teachable moments

IV. Special Needs of the COPD Patient

V. Review of the Experimental Program/Materials and Methods

   A. Ten problem diagnoses and mini-modules for teaching

   B. Discussion of "fit" with nursing process

   C. Implications in other chronic disease areas

"Pulmonary Patient Education" (continued)
AGENDA--page 2

- D. Resource materials:
  - 1. Supplementary information file for nurses
  - 2. Handout information file for patient distribution

VI. Distribution and Discussion of Self-Instruction Module on The Teaching-Learning Process in Patient Education

- A. Review of instructional purpose and performance objectives
- B. Highlights:
  - 1. Communication techniques
  - 2. Patient motivation
  - 3. Evaluation of teaching
- C. Formative chekcs

VII. Implementation of the Program/Recording Procedures

VIII. Evaluation Procedures/Contact Hour Requirements

IX. Questions and Discussion

PROGRAM GOAL: To increase staff nurse involvement in chronic obstructive pulmonary patient education through the use of an experimental model

PROGRAM: "COPD PATIENT TEACHING"

Learner-Centered Objectives	Method	Evaluation
Through workshop participation the nurse will --examine the value of patient education as an integral part of nursing care --review the key teaching points relative to ten identified COPD patient problems --discuss barriers to hospital patient teaching and define possible solutions --identify a variety of teachable moments in the day of a patient and select appropriate teaching points Through completion of a self-instruction module the nurse will --relate the knowledge and skills of the educational process to the role of the nurse as a patient teacher Through study of the resource materials the nurse will --plan for use of resources in patient teaching Through implementation of the model the nurse will --transfer the learning experience to actual performance --evaluate strengths and weaknesses of the model	Utilization of an experimental model for hospital patient teaching Orientation Workshop Lecture/Film/Q and A/ Group Discussion/Problem Solving Review of resource materials Completion of self-instruction module, "The Teaching-Learning Process in Patient Education" Practical implementation of the model over a 4-6 week period of time	Pre- and posttesting of attitude toward patient teaching Workshop evaluation Instructor review of medical records (nursing notes) for recorded educational interventions Instructor interviews with COPD patients Post program evaluation --nurse self-report --identification of program strengths and weaknesses Completion of formative evaluations found in the self-instruction module

APPENDIX B
SELF-INSTRUCTIONAL MODULE

"The Teaching-Learning Process in Patient Education"

SELF-INSTRUCTION

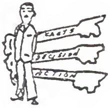
MODULE

on

"THE TEACHING-LEARNING PROCESS

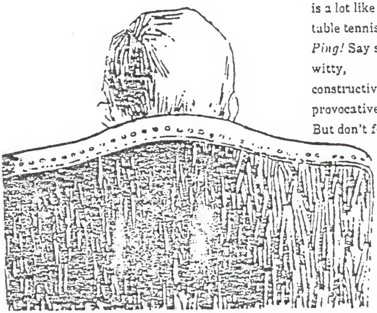
in

PATIENT EDUCATION"



Listen!

See that
quiet man
at the
end of the
table?
He's making
a valuable contribution
to the
conversation.
He's *listening!*
Everyone else
is talking,
but he's listening.
The old proverb goes:
*"One pair of ears
draws dry
a hundred tongues."*
If you keep talking,
you only say
what you already know.
If you listen,
you may learn something
you didn't know.
Conversation
is a lot like
table tennis.
Ping! Say something
witty,
constructive,
provocative.
But don't forget to
pong!
It's easy.
Just stop talking
a minute—
and listen!



THE TEACHING-LEARNING PROCESS
IN
PATIENT EDUCATION

Instructional Objective:

Relate the knowledge and skills of the teaching-learning process to the role of the nurse as a patient educator.

Definitions:

Patient education - a teaching-learning intervention for the purpose of helping patients better manage their illness, through implementation of planned opportunities for learning. (Used interchangeably with patient teaching)

Assessment - the process of data collection and review to determine needs and state of readiness for learning

Planning - the process of determining specific learning objectives; defining directions, actions or opportunities for reaching objectives; and establishing priorities.

Evaluation - study of the outcome of an action or planned series of actions or experiences to determine the worth or value in fulfilling the purpose for which the action was designed.

Formative evaluation - evaluation for the purpose of helping the practitioner or planner work more effectively at each phase or stage in the implementation of a program.

Summative evaluation - determination of the success, strengths and weaknesses of a completed program. This overall study is a basis for continuation or revision of a program.

Outcome expectations - beliefs about whether a given behavior will lead to an expected outcome.

Efficacy expectations - beliefs about one's own capability of performing that behavior that will lead to a specific outcome.

Performance Objectives: As you work through this module you will

1. Identify the steps in the teaching-learning process as they relate to the nurses' role in patient education.

2. a. Identify a patient problem and write an example for each of the Table II interview skill techinques.

   b. Demonstrate an understanding of the responsibilities of the nurse as a patient teacher.

3. Develop at least two specific strategies to promote patient learning and be prepared to share them in class or apply them in the hospital setting.

4. Design an educational program for a patient of your choice. Provide a description of the patient and family; write learner objectives; outline strategies, resources and teaching aids to be used; identify "teachable moments"; and list possible barriers or problems to be considered.

Learning Resources

The minimum resources needed for completion of this module are included in the module. Additional information can be obtained by reading from the listed references. Particularly recommended for reading is the National League for Nursing booklet, Patient Education.

Objectives Checklist

( ) 1. Formative questionnaire on the teaching-learning process.
( ) 2.a. Completion of one example each of the interviewing skills techniques.
( ) b. Completion of questionnaire on responsibilities of the nurse as a patient teacher.
( ) 3. Two strategies for teaching specific content or skills.
( ) 4. Patient education program plan for an identified patient.

Learning Resource 1

The Teaching-Learning Process

The steps in the educational process are basically the same as those in the nursing process: assessment, planning, implementation and evaluation. The process is sequential in nature but, particularly in the hospital setting, there is often considerable flow back and forth between the steps. Patient education will not profit from an overemphasis on the teaching process but many of the strategies can be integrated into the nurse's daily interactions with the patient.

Assessment: Assessment relevant to patient education concerns the patient's needs, present knowledge and experience, readiness, motivation and lifestyle. Once a professional nurse has become comfortable with the formal process, assessment may become a more informal procedure with no loss in value. Familiarity with a comprehensive history questionnaire will prove a knowledge base for asking the right questions during informal conversations and for making the needed observations.

Readiness reflects the patient's ability or capacity to understand a particular topic. This ability is closely tied to the physical and emotional state and in some instances it may be appropriate to refer a patient for counseling and delay teaching or provide information to a family member.
Readiness also relates to the material (information) and the method of teaching. Learners must have the necessary prerequisite experiences and knowledge and they must be competent in those areas required for the information exchange, i.e. reading, sight and hearing, manual dexterity, etc.

Motivation, although often synonymous with readiness, is better defined separately as the patient's desire to learn. There are several dimensions to motivation.

1. Learning is most effective when the patient wants to learn something. The more closely you can relate your information to the felt needs of the patient, the more likely the patient will be to respond positively and use the information. When you are with patients you should watch and listen for clues of what concerns them. Use their concerns as lead-ins for teaching important points. Ask open-ended questions which can help them reveal their concerns.

2. Patients vary in their willingness to manage their disease themselves. It is important to assess your patient's desire for participation. Some patients do best when they are treated as partners in their own care. Other patients are reluctant to learn and the more traditional authority figure approach may be the most effective motivator. Giving the patient some simple choices to make first may encourage more active decision-making later.

3. Sources of patient motivation need to be identified. It is important not to "give-up" but to seek ways to increase the patient's motivation level. As you talk with patients watch for signs of their sources of motivation. When a patient is poorly motivated some

of the signs will be
- poor eye contact
- vague responses
- fading voice
- efforts to direct your attention elsewhere
- outright denial of need or ability

Respond to these signs by breaking information down into small pieces and look for moments when the patient seems most alert and receptive. Try to involve a family member who is motivated to help and consider making referral for followup teaching after discharge.

Knowledge of what the patient already understands and acknowledging that to the patient is a key to establishing rapport. Listening is essential to discover not only what the knowledge level is but also how the patient interprets information. Here again the open-ended question will serve you well. Examples are, "What medications were you taking before you were hospitalized?" or "What did your doctor advise you to do for shortness of breath?"

The patient's experiences with the recommended regimen may be either a positive or negative force to further learning. Assess the previous knowledge and its accuracy and also try to identify problems and attitudes about the value of the medication or therapy program. You may need to help a patient "unlearn" misinformation or reverse a negative attitude.

Lifestyle is important to assess since it strongly affects the patients' compliance when they return home. If your recommendations will be difficult or impossible to follow in the home situation, it is likely that the regimen is doomed to failure. When assessing lifestyle you might ask the patient to describe a typical day or night. Because family members can either support or block the patient's self-care program, they are a resource to be considered in your assessment.

Planning: Planning is frequently a formal process and is a time-consuming step. Planning for patient education, however, is more likely to be informal and less involved. The general educational needs of most illness are already defined. Further, the hospitalized patient is seldom amenable to extensive educational sessions even if you had the time to devote to teaching. The primary goal of your planning is to ensure that the overall learning objectives are adapted to the individual patient. This also means using appropriate resources and planning to encourage the patient to actively participate in the learning when and whereever possible. Patient education planning should never obstruct taking advantage of unexpected occasions for patient learning. Setting specific times for teaching is often impossible.

Implementation: Learning can be promoted in a variety of ways. Some of these are discussed in this learning resource but other strategies can be found to be equally effective.

Positive reinforcement means simply to encourage the patient by giving positive feedback whenever possible. This may be done not only with words but also with facial expression, a touch or other sign that you are pleased with the patient's progress.

Use of examples is an excellent way to communicate information. Instead of telling the patient to eat a nutritious snack between meals, give several examples of good snacks. When you are not sure of the patient's understanding, it is equally helpful to ask for an example in explanation.

Encourage questions and find ways to give the patient the confidence to feel comfortable asking questions. You can help the flow of questions with appropriate pauses and statements such as, "Would you like to go over that again?" Avoid medical jargon unless it is something the patient will probably hear often and will need to understand.

Provide opportunities for return demonstration. The patient will usually gain more from information provided is given an opportunity to reexplain or demonstrate understanding. Role playing can be valuable to help patients practice dealing with situations they anticipate will be difficult.

One important thing to remember in both planning and implementation is that the patient does not have to be provided with every detail relative to the disease or problem. A few of the most important points which will be remembered and used are better than a "full course" which will only serve to overwhelm. Referran may be made for additional information to be given by the home-care nurse or at an outpatient clinic.

Evaluation: Evaluation must occur throughout the teaching as you look for signs that the patient understands or seems interested. Asking the patient to do a return demonstration or explanation is one way of determining the level of understanding. Table I gives suggestions for way to evaluate. One way to improve your patient teaching is to listen to yourself on a tape recording. As you listen to the tape you can check yourself on the following list. Did you

- give the patient an overview of what will be explained
- use visual aids or examples
- explain any medical terms used
- reinforce positive attitudes or behaviors
- have the patient practice using new information
- provide the patient with immediate feedback

- encourage patient questions
- ask the patient for examples of situations
- help the patient anticipate problems
- use open-ended questions and "listen" to learn
- sum up or have the patient sum up

The concept of evaluation as either summative or formative is appropriate to patient education. In most instances, formative evaluation is the most relative, since it is important for the nurse-teacher to critique the instructional process in order to facilitate learning. Such formative evaluation-can be used by both the teacher and learner to determine what learning activity needs to be reinforced or repeated. Summative evaluation, or assessment of the overall teaching effectiveness, has limited value, since the patient's discharge from the hospital often precludes followup or sometimes even completion of an educational program. The primary value of summative evaluation is to provide a critical look at the total instructional effort from the viewpoint of teaching improvement with the next patient.

Formative Check: Learning Activity 1

Administer yourself the following check on the teaching-learning process. When you have completed all items, check your answers at the end of the check-list. If you did not answer all of the questions correctly you may want to reread the related resource material.

Formative Check: Performance Objective 1

Classify each of the following items as related to the teaching-learning steps of assessment (A), planning (P), implementation (I), or evaluation (E).

___ 1. "Do you mind showing me how you use your inhaler?"

___ 2. A demonstration of diaphragmatic breathing

___ 3. "What did Dr. Jones tell you about your diet?"

___ 4. A patient checklist of learning objectives

___ 5. "Who do you have at home who is able to help you?"

___ 6. "Now that we've talked about your medications, can you tell your family why the doctor prescribed Theo-dur?"

___ 7. "I'm glad you asked that - it is an important point."

___ 8. The patient in 301 needs to learn to cough productively.

___ 9. Referral to a clergyman

___ 10. "This is called an I.P.P.B. machine machine which stands for intermittant positive pressure breathing. That is medical jargon for ..."

___ 11. "When a friend wants to know what emphysema is, what do you say?"

___ 12. A model of the lungs and diaphragm

___ 13. "What questions do you have about your medicines?"

___ 14. "Let me show you how to breathe through pursed lips."

___ 15. "Would you mind if I recorded my explanation of ...? We can play it back and see if I left out any important details."

Answers to Formative Check 1

1. A (or E)	6. E	11. E (or A)
2. I	7. I	12. I
3. A	8. P	13. A
4. P	9. A	14. I
5. A	10. I	15. E

Some of the above items could be interpreted as a different step in the teaching-learning process. Mark those you would like to discuss.

Learning Resource 2

Effective Communication

Effective communication is a "key" to facilitating learning. Communication requires skill development as well as knowledge. The content to be communicated is the basic need but unless the other components of good communication are present it is unlikely that the content will "change" the learners attitude or behavior.

What are some of the skills needed for communication?

1. Creating a climate for communication calls for feed-forward instruction. Three principles are important to feed-forward instruction: the teacher's role is a) to facilitate access to information. b) to share rather than transmit, and c) to let the learner experience rather than hear how it is.

2. Interviewing is integral to the interaction of the nurse and patient. The interview is used throughout the teaching-learning process and involves asking questions, clarifying responses and listening. The techniques of interviewing are -escribed in Table II.

3. Speaking the same language means more than just the same native tongue. The teacher needs to be sure that professional jargon is left behind and also, to be sure the "words" have the intended meaning to the learner. There is skill required to discover what was "heard" witho-t being obtrusive. Practice by role-playing with colleagues. Table III suggests an evaluation form which can be helpful. In a role-playing situation one member of the group may serve as the observer and use the form to record the skills demonstrated.

In the role of patient educator, the hospital staff nurses have a responsibility to:

- adjust and reconcile the messare to accomdate the individual patient. The message must be presented in lay language suitable for the level of the individual patient. This involves assessing the patient's communications skills and determining the need to adapt both language and method of presentation.

- involve the patient. Your patient should be looked upon as a partner in the communication process. Giving the message is your professional responsibility but one-way communication is not the answer. "Telling" is not enough, since it is important to assess the understanding and make some prediction about the use of the information. The nurse must recognize the patient as a valuable resource who can be actively participating in the planning, implementation and evaluation processes.

- know the community resources available to your patient and how to "access" them. Be in a position to refer the patient to those agencies, organizations or professionals prepared to assist with solution of a variety of problems or provision of needed goods and services. In cases where it appears that the patient may not be able to followup, the nurse should be ready to provide additional suggestions or direct help.

- personalize their approach. In this age of mass production, impersonalization is almost a fact of life. Effective communication through a mass media approach is possible under certain conditions. Patient education, however, is not a process calling for such a strategy. The face-to-face approach provides the best climate for the personal interaction needed to ensure that the message falls on listening ears and that the motivation to act on the message is present.

Formative Check: Learning Activity 2

Following are two checks on effective communication in patient teaching. Check your answers by discussing them in class or with your colleagues. Reread the learning resource material if you find you are having difficulty.

Formative Check: Performance Objective 2.a

Identify a patient problem which calls for an educational approach and write an example for each of the interview skill techniques from Table II.

Patient problem:

Technique	Example
Asking questions	
a. Open-ended	
b. Closed	
Clarifying responses	
a. Open-ended probes	
b. Phrase repitition	
c. Validating	

Listening actively

a. Nonverbal cues ______________________________

____

b. Nonintrusive supports ______________________________

____

c. Focusing your listening ______________________________

____

Formative Check: Objective 2.b

In each of the four areas of responsibility for the nurse-teacher answer the questions provided below.

1. Adjust and reconcile the message to accommodate the individual patient.

   How would you adjust your nutritional message for the patient who is a vegetarian - whose dentures are poor-fitting - who is a Seventh Day Adventist ...?

   How would you know any of these facts?

2. Involve your patient.

   How do you perceive your patient's needs and competencies?

   How can the patient become part of the planning process -- the implementation process - the evaluation process?

3. Know the available community resources.

   Can you list ten problems common to the COPD patient?

   For each problem can you offer one or more concrete referrals or recommendations?

4. Personalize your approach.

   How can you keep your teaching from becoming an impersonal and mechanical presentation?

   How do you recognize when your fatigue and strain level is high?

   How do you handle your stress ... your patient's stress?

Learning Resource 3

A Look at Learning

Learning has been defined by Chance (1979 p.17) as a relatively stable, unspecified change within an organism that makes a change in behavior possible and that is due to experience. In other words, learning is not evanescent; it requires experiencing something; and it does not necessarily result in a change in behavior or performance. This definition has implications for teaching. Experiencing does not necessitate "hands on" but at the least, the learner must be mentally attending and experiencing. Since learning is not "fleeting", memory is a reflection of learning if the questions used are directly related to the content and context. Finally, we cannot say that learning has not taken place just because the behavior has not changed. If our goal is a change in behavior or performance we can, however, evaluate our success or lack of success. A question which the patient educator must answer personally is whether the responsibility for behavior change should fall on the teacher.

There is evidence in the research to indicate that learning frequently results in attitude and behavior change. There is, however, a complication to measuring learning by hehavior change. It is possible that behavior may result from mimicry rather than learning and this behavior seldom continues when the motivating punishment or reward situation is removed. It is necessary, therefore, to evaluate the success of your teaching in more than one way. Ask yourself the following questions.

- Can the patient "explain" in his own words?
- Is there evidence of interest, enthusiasm or desire to put the information into practice?
- Is the family involved and supportive?
- Is the patient taking over control of the situation?

In addition to these questions, some factors which increase the patient's likelihood of adherence to a medical regimen are defined in Table V.

In order to facilitate learning it is important to be aware of some of the characteristics of learning.

1. Knowledge which is meaningful to the learner and which is presented in a context understood by the learner is most readily learned.

2. Simple repetition of facts does not necessarily result in learning but recitation or retrieval of the information through questioning will improve later recall of information.

3. Learning is the result of experience, either through personal performance, reaction or response, or through vicarious experience. Experience takes many forms and the effective teacher uses a variety of methods and approaches to enrich the learning experience.

4. The learner's knowledge of what is expected as an outcome or learning performance increases the level of achievement of that outcome or behavior.

5. Information must be "attended to" in order to be learned. If either internal or external forces interfere with the learner's attention, learning will be impeded.

6. Learning is reinforced by stimuli which produce a positive or pleasant emotional reaction.

The theories, research and articles on the subject of learning are myriad. In education of the hospitalized patient it is perhaps most important to minimize the teaching and treat the patient to only small doses at any one time. Remember, it is not the time or place for the "full course" of education.

In Table V there are Variables that influence patient adherence to regimens. Since your primary educational goal is to promote compliance with a regimen and a high level of patient self-care, these variables need to -e considered as part on your teaching strategy.

Most teaching can be grouped as telling, discussion, showing, performance demonstration or supervised study. Each of these categories of instruction is applicable to teaching the hospitalized patient. Unfortunately, the telling and showing methods are the most used and are unrelieved by use of teaching aids, discussion or return demonstration. If the teacher keeps foremost in mind that learning is an active process, there will be an emphasis on involving the learner as a participant rather than an observer.

Another variable that influences learning and behavior is that of expectation. There are two possible expectations, outcome expectations and efficacy expectations. If a patient believes that a particular behavior or adherence to a regimen will have a certain result, this represents the outcome expectation. In addition to an outcome expectation, however, the individual patient has an efficacy expectation or a belief about his ability to carry out the identified behavior. The patien's efficacy expectations are vital to the final result of the teaching. First, learning should bring about belief in the identified behavior as bringing about the desired outcome. No patient will continue to behave as recommended if he does not believe it will help him. But the second expectation is also necessary - the patient must feel capable of performing the behavior that he believes will help him.

According to Bandura (1977, 1982) there are four primary sources of influence on efficacy expectation.

1. Mastery or success through personal experience

2. Observing others who present as similar to the observer in age, sex, physical condition, etc.

3. Verbal persuasion and encouragement.

4. Physiological state, e.g. mild aches and pains, tremor, sweaty palms, rapid heart, etc., which are interpreted as a sign of physical inability.

The key point to be made is the patient must have self-confidence in his ability. Since this is crucial, the teacher must mind ways to build the patient's self-confidence.

Formative Check: Performance Objective 3

This learning resource contains only a brief overview of the learning process. The bibliography provides additional reading on this complex subject. Even with extensive reading, much of a teacher's success is the result of imagination, creativity and a willingness to "try a new approach". Use your creative talent tc develop at least two differenc techniques or strategies for teaching a specific content or skill to a hospitalized patient. State the learner performance you are seeking and be ready to explain your strategy to your class or apply it to an actual hospital patient situation.

Learning Resource 4

Organizing for Patient Education

When the chronically ill patient is hospitalized there is a unique opportunity to prepare the patient and the family to better manage their regimen at home and to prevent emergency episodes. In spite of this opportunity, obstacles interfere with effective patient education:

- time is severely limited
- the seriously ill patient is not receptive to "heavy doses" of information
- there is conflict over who should do patient education
- medical staff is not necessarily trained to facilitate learning.

Knowing what the patient needs to know about disease and its management is an important component of patient education. Because of the constraints imposed by the situation there is a need to set realistic expectations for patient learning. Organizing a patient education program for a specific patient involves a variety of tasks and considerations. Three of these are discussed below.

Setting priorities: A list of learning objectives for the chronic obstructive pulmonary disease (COPD) patient is found in Table VI. From such a list, or by writing your own objectives, the first task in organizing for patient education is to decide which objectives are a priority for your individual hospitalized patient. Because the objectives are written in terms of performance, it is easier to decide when each objective has been reached. Table VII will help you to set patient priorities even in other disease or illness areas.

Coordinating teaching: The hospital setting is not generally organized to facilitate teaching. Frequently, it is not even clear which of the medical staff is to do which portion of the educational program. Many of the staff will say that they cannot find time for patient education but, in truth, the patient may receive more teaching than is actually documented. Having a clear procedure for who will cover what topics, however, will foster the best results. "Teaching" is more likely to become education when it is well thought out and implemented than when it is serendipitous. It might be helpful to log your time for a week and then analyze the teachable moments which might be used. Before efforts can be coordinated there must be time set aside for planning together. If your hospital has a patient education coordinator, you will want to ask help in approaching the problem.

Finding time: Once you have decided on an educational plan for a patient, selected or written objectives, gathered resources and planned a strategy or approach, ghe biggest challenge may be finding the time. It is essential that patient education be integrated into patient care tasks. The following questions may help you decide when the best opportunities can be found.

- What is the patient's daily routine, including therapy orders, medicine regimen, diet program, etc.? What is the predicted discharge date?
- What are the immediate learning needs? Is the patient having diagnostic tests or receiving special medication?
- What teaching has been done? What information needs to be reinforced?
- Are there patient care tasks scheduled today which will give an opportunity to teach?

- What is your day shaping up to be? Can you see some space during the late morning when you can talk to the patient for five or ten minutes?
- What patients on the unit today have urgent learning needs?
- What other staff might be able to help meet some of the learning needs you anticipate? Have you found a time to talk over patient learning needs with other nurses on your unit?

Teachable moments are often spontaneous, for example, when you are passing out medications or answering a patient call. If you have already thought through the patient's learning needs you will be in a better position to take advantage of those spontaneous occasions. Patient education may make you think of a formal session with the patient but in the hospital setting a brief interaction often provides a learning opportunity. This means you must reduce each information block into a short manageable segment which will overwhelm neither the patient nor the nurse.

Formative Check: Performance Objective 4

From one of your current cases, select a patient who can be benefitted by implementation of a planned educational program. Write objectives for the learner, strategies for reaching each objective, resources and teaching aids and identify teachable moments to be used. Project way to handle possible barriers or problems which may interfere with your plan. Submit your plan for evaluation by the class instructor or charge nurse, then give it a try.

TABLE I *

Table 9-4. Evaluation

Dimensions	*Ways to evaluate*
Patient's understanding	Ask if the patient has questions.
	Ask the patient questions. How you phrase the questions influences how free you feel to ask and how comfortable the patient feels to answer. For example, asking "What will you tell your neighbor if he asks you what emphysema is?" may be more readily answered than "What is emphysema?"
	Have the patient demonstrate the desired skill or behavior and evaluate.
	Watch for clues during explanation: Does eye contact falter? Is patient's face expressionless? Is there little or no verbal or nonverbal indication of understanding?
Patient's ability/intention to follow prescribed regimen	Give the patient responsibility for managing part of the prescribed regimen while hospitalized and see whether problems arise, for example, with medications.
	Encourage the patient to identify anticipated problems by asking about similar regimens tried previously. Attempt to identify if any of the same problems exist with current regimen (for example, inconvenience, doubted benefits, confusion about how to implement). Examples: "What are some ways that you might remember to take your medication at work? Did you notice when you had the hardest time remembering your medications before? Is that going to be a problem this time?"
	If the patient hasn't yet tried your recommendations, encourage the patient and/or the family to consider whether they are realistic. Example: "Now that we've talked about reducing calories and salt, what changes do you think you'll be needing to make in your kitchen? Is that going to be a realistic goal to aim for?"
Patient's priorities	Ask whether there was something on the patient's agenda that you have not addressed yet. Example: "Is there anything else besides what we just talked about that you're wondering about?"
Your teaching methods	Ask the patient to help you evaluate your teaching methods (for example, your interactions, patient interactions with others, AV materials, handouts). Examples: "What has been most useful to you so far in learning about ________? What wasn't very useful? What could you have done just as well without?"
	Watch whether the patient asks questions or seems confused after various teaching sessions, with you, with other staff, with AV materials.
	Give the patient a brief checklist to indicate what was helpful and what was not.

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TABLE II *

Table 9-2. Interviewing skills

Technique	*Description*	*Example*
Asking questions		
a. Open-ended questions	The open-ended question allows the patient maximum flexibility in responding. It minimizes your tendency to impose your own agenda on the patient's answer and therefore usually gives richer information than the closed question does.	"How do you feel about this medication schedule?"
b. Closed questions	The closed question requires the patient to answer yes or no. It therefore limits the type of information that you can acquire and runs the risk of missing the most critical information about the patient. Closed questions should not be relied on to gather most patient information. They are useful primarily for obtaining narrow types of information.	"Have you taken a diuretic before?"
Clarifying patient responses		
a. Open-ended probes	There will be times when you need to follow upon a patient's response to a question either because you are particularly interested in the information or because you need to clarify what the patient means. Brief open-ended questions will often draw out the information you need.	"Can you give me an example?" "How do you feel about that? Can you tell me more about that?"
b. Phrase repetition	If there is a particular aspect of the patient's comments that you would like clarified, you can repeat with a questioning tone a brief but key phrase used by the patient.	Patient: "I tried to force myself to breathe out twice as long as I was breathing in, but I started to get scared." You: "Started to get scared?"
c. Validating	To clarify a patient's meaning or to check whether you understand the patient correctly, you can restate the patient's comments as you heard them and then ask the patient whether your restatement is accurate.	It sound like something that worries you is whether your wife is going to be able to handle your care at home. Is that right? . . . Can you tell me more about that?

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Table 9-2. Interviewing skills (continued)

Technique	*Description*	*Example*
Listening actively		
a. Nonverbal cues	Your nonverbal cues can greatly influence whether a patient feels you are taking him or her seriously; therefore, these cues affect how much information the patient gives you.	When you meet with a patient, do you stand with the air of one who is *staying* and not about to race out the door? Better yet, are you seated? Do you have good eye contact with the patient? Are you looking at your watch or glancing out the door as though expecting someone to come for you at any minute? Does your facial expression suggest boredom or frustration? Are you fidgeting in a way that suggests impatience? Nod your head or say "umhum" at appropriate points.
b. Nonintrusive supports	You may want to signal the patient to continue talking without interrupting the train of thought.	
c. Focusing your listening	To help focus your listening, ask yourself whether you could restate what the patient is saying. Imagine what the patient's experience might be like for you as a patient.	

TABLE III

Interview Evaluation

Skill	Evaluation			Comments
	Often	Occasionally	Never	
1. Maintains eye contact	1	2	3	______
2. Displays open posture	1	2	3	______
3. Uses open-ended questions	1	2	3	______
4. Asks leading questions	1	2	3	______
5. Interrupts patient	1	2	3	______
6. Encourages patient by use of verbal facilitation ("Go on.")	1	2	3	______
7. Encourages patient by use of nonverbal facilitation (nods head)	1	2	3	______
8. Encourages patient by use of silence	1	2	3	______
9. Uses appropriate language	1	2	3	______
10. Clarifies terms	1	2	3	______

Circle the most appropriate description of the interviewer's behavior:

11. Suggests problems, facts, solutions.	11. Asks patient for clarification of his perceptions
12. Interprets patient's feelings, motivations, inadequacies without listening to patient	12. Seeks to understand patient's feelings and ideas about his condition.
13. Conveys doubts about the patient's ability to cope with his condition	13. Encourages and supports patient in using his abilities.

Briefly describe the patient's major concerns:

TABLE IV

TEACHING TIPS:

1. FIND OUT THE LEARNER'S NEEDS AND WANTS (OPEN-ENDED QUESTIONS /LISTEN). INCORPORATE THESE THINGS INTO THE TEACHING GOALS.
2. DO SHORT (5-10 MINUTE) TEACHING SESSIONS WITH THE LEARNER THROUGHOUT THE HOSPITALIZATION STAY. DO NOT WAIT UNTIL IT'S TIME FOR THE PATIENT TO BE DISCHARGED BEFORE STARTING.
3. DEVELOP A COMFORTABLE RELATIONSHIP (RAPPORT) WITH THE PATIENT BEFORE TRYING TO "TEACH".
4. LOOK OVER EDUCATIONAL MATERIAL BEFORE DISTRIBUTING TO PATIENTS SO THAT YOU KNOW WHAT IT COVERS AND THAT IT IS APPROPRIATE.
5. FACTS ARE NOT ENOUGH. PATIENTS NEED TO KNOW WHAT TO DO WITH THEM.
6. TEACH TOPICS/SKILLS THAT CAN BE INTEGRATED INTO ACTIVITIES OF DAILY LIVING AND IMPROVE THE PATIENT'S SELF-CARE.
7. GIVE CLEAR SIMPLE EXPLANATIONS. DO NOT OVERLOAD THE PATIENT WITH FACTS.
8. SUMMARIZE AND REINFORCE MAIN POINTS. ASK QUESTIONS TO FIND OUT IF THE PATIENT UNDERSTANDS THE MATERIAL COVERED.
9. PROVIDE TIME FOR THE PATIENT TO PRACTICE SKILLS, RETURN DEMONSTRATIONS, ETC.
10. DO NOT FORCE. TEACH AS MUCH AS THE PATIENT/FAMILY IS ABLE TO ACCEPT.
11. GIVE VERBAL AND NONVERBAL FEEDBACK WITH EACH PATIENT CONTACT.
12. THINK TEACHING EVERY TIME YOU ARE WITH A PATIENT AND RECORD YOUR TEACHING IN NURSING NOTES EVEN WHEN IT WAS A SHORT EPISODE.

TABLE V *

Table 9-3. Variables that influence patients adherence to regimens

Variable	*Factors that increase adherence*
Patient's understanding of therapy regimen	Patients remember best: Points that the patient felt were important (not always the same as staff).
	Points that were mentioned first or last.
	Points that were stated very simply and explicitly.
	Points that were emphasized or repeated.
	Shorter lists of instructions.
Convenience of the regimen	Regimens most convenient: Integration into the patient's existing schedule of meals, work, play, sleep.
	Adaptation to patient's resources.
Strong group support for following prescribed regimen	Support of family and friends if they are provided with information about importance of regimen.
	Continued contact with the same health staff.
Patient's belief in effectiveness of regimen	Staff's explanation of importance of regimen.
	Patient's ability to see improvement as a result of the regimen.

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TABLE VI *

Exercise 1

LEARNING OBJECTIVES FOR PATIENTS

Below are the patient learning objectives listed at the end of each chapter. Identify which would be appropriate for your setting and patient population, which you would delete, which you would modify, and what objectives you would add. Get feedback from staff.

Disease process:

Patients should be able to:

- List key structures in the respiratory system and describe how these structures have changed to produce the patient's symptoms, including chronic cough, viscous sputum, recurrent infection, shortness of breath, and wheezing.

Psychosocial issues:

Patients should be able to:

- Talk with staff and other COPD patients about concerns.
- Get help dealing with psychosocial problems by talking with a staff member; appropriate referral such as clergy, social worker, discharge planner, other patients; or by getting a referral to a community resource or agency.
- Receive help in learning new breathing patterns and how to relax.

Community resources:

Patients should know:

- How to state their needs clearly.
- How to locate potential resource agencies.
- What questions they want to ask to identify the services available.
- What questions the agencies may ask them.
- What will happen during the referral or at the first contact with the agency a referral is being made.
- Who to turn to if they feel they cannot locate resources by themselves.

Pulmonary diagnostic studies:

Patients should be able to:

- State the name of each study done.
- State the purpose of each study.
- Know the following about preparation for and undergoing the test: any special preparation, how the test is done, when and where it is done, how long it takes, sensations to be expected, and how to make himself or herself more comfortable during the test.

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Exercise 1 (continued)

LEARNING OBJECTIVES (continued)

- Ask any questions they have about the tests to be done and the results.

Physical therapies:

Patients should be able to:

- Demonstrate ways to coordinate breathing with functional activities.
- Demonstrate ways to conserve energy during daily tasks such as taking a shower.
- Demonstrate ways to promote airway potency, such as pursed-lip breathing and prolongation of the expiration phase.
- Demonstrate ways to relax and slow their breathing.
- Demonstrate ways to cough effectively.
- Demonstrate ways to increase the use and strength of the diaphragmatic muscle during breathing.
- Demonstrate ways to drain secretions.
- Have access to staff to obtain information about percussion and vibration, mobility exercises, and physical conditioning or physical endurance building.

Nutrition:

Patients should be able to:

- Name their nutritional requirements and restrictions related to nutrition or eating habits.
- State the need for correcting these problems.
- List the ways they intend to correct these problems.
- Explain the manner in which dietary habits can aid in the conservation of energy.
- Name foods that cause distension.
- Explain the role of fluid intake in the expectoration of mucus.
- Recall the community resources available to aid them in maintaining nutrition status.

Medication:

Patients should understand:

- The name and dosage of this medication.
- When to take the medication and what to do if a dose is missed.
- The techniques of administration and storage of each drug.
- The normal appearance of the medication and appearance changes that would indicate that it should no longer be consumed.

Exercise 1 (continued)

LEARNING OBJECTIVES (continued)

- Why each drug is important. Any signs that suggest the medication is helping the condition, for example, decreased breathlessness, decreased signs of infection, and so forth.
- How to minimize common nuisance side effects.
- What to do to prevent serious side effects and how to deal with them if they should occur.

Respiratory equipment:

Patients should be able to:

- List and demonstrate the steps in using any respiratory equipment that has been prescribed.
- State the purpose of any respiratory equipment that has been prescribed.
- State why this equipment must be kept clean.
- List and demonstrate the steps in cleaning this equipment.
- State the danger signals that would cue them to seek medical advice about using equipment, such as IPPB.
- Ways to integrate taking medications into their daily pattern.
- Ways to help them remember to take their medications.

TABLE VII *

Exercise 2

SETTING PRIORITIES

In planning for patient education, you will need to set priorities among the various learning objectives established for each group of patients. As you decide in what order you want to approach the major topics, ask yourself the following questions:

- What learning would help patients prevent or manage life-threatening situations? What are the consequences, in terms of patient safety, of specific outcomes *not* being achieved? What learning can most affect the patient's sense of control or quality of life?
- Which learning objectives are best achieved in the hospital? (Some will be equally easy to accomplish in a clinic or physician's office after discharge, and some will require that the patient be at home for a period of time. Others are best taught *only* by staff available at the hospital.)
- What does the usual reason for admission to your unit suggest about priorities for patient learning? For instance, priorities may well be different for patients admitted for asthma than for those coming in for a worsening condition of emphysema or chronic bronchitis.
- What is the typical pattern of hospitalization for COPD patients in your unit? What sort of information is typically gathered at the time of admission? What is the average length of stay?
- How might learning experiences be ordered so that the most critical information is presented to the patient prior to discharge?

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SUGGESTED READING

American Hospital Association. *Staff Manuals for Teaching Patients* (Chronic Obstructive Pulmonary Diseases, Diabetes Mellitus, Hypertension, Rheumatoid Arthritic) Chicago: American Hospital Association, 1982.

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APPENDIX C
EXPERIMENTAL EDUCATIONAL PROGRAM
MINI-MODULES

PROBLEM: Shortness of Breath (S.O.B.)

Immediate Care

Help into comfortable position--often sitting with arms leaning on bed, table, or pillows.

Touch and reassure.

Check oxygen situation, pain or possible reasons --rapid breathing

Help to relax and slow breathe.

Encourage diaphragmatic breathing as appropriate

Follow-up

Teaching diaphragmatic breathing.

Teach Important Points

S.O.B. is a perception of uncomfortable breathing; can result from decreased lungs, abnormal ABG's, and psychological factors as some of the causes.

Importance of slow breathing --count of 3 in and 5 or 6 out to get stale air out.

Relaxation of neck and shoulders.

Breathe out through pursed lips.

Comfortable positions.

Review diaphragmatic breathing if appropriate.

RESOURCE FILE

Supplementary Information:

"Breathing Techniques"

Read Chapter 5, AHA *Manual for Teaching Patients about Chronic Pulmonary Diseases*.

Handout:

"Put Yourself in Control"

"Quieting Reflex"

"Handling Shortness of Breath"

PROBLEM: Smoking Behavior (Smoking)

Immediate Care

Do not nag or preach.

Show nonjudgemental concern.

Ask if patient has tried to quit smoking. Offer to help, if appropriate, provide information on resources.

Remember, smoking is a very personal habit and creating defensive hostility will help no one.

Follow-up

Offer encouragement without preaching.

Suggest substitutes such as sugarless gum or hard candy.

Teach Important Points

Stress positive aspects of quitting.
  --slows progress of COPD.
  --improved circulation.
  --reduced insult to heart and stomach.

Explain it's never too late to benefit from quitting.

Offer tangible suggestions for quitting.

RESOURCE FILE

Supplementary Information:

"When Your Patient Smokes"

Handouts:

"Helpful Hints to Unlearn the Cigarette Habit"

"Cigarettes"

Lung Association flyer on Freedom from Smoking

PROBLEM: Airway Clearance, Ineffective (Cough)

Immediate Care

Elevate patient to sitting position, if possible, support diaphragm with pillow.

Reassure, touch, help to relax and nose breathe if possible.

Give sips of water.

Provide for mucus disposal.

Follow-up

Check on fluid intake and reinforce importance.

Check with physician on referral for postural drainage or respiratory therapy.

Teach Important Points

Stress lots of water daily, 10-12 glasses counted.

Encourage coughing to clear airway.
How to cough: (Handout)

1. Breathe in deeply, but not gasp.
2. Hold breath 2 seconds.
3. Cough 2 or more sequential coughs.
4. Breathe in by sniffing gently.

Best position sitting with feet on floor and head slightly forward.

Reassure coughing not harmful.

Stress watching for mucus color change to yellow or green as sign of infection--call doctor.

RESOURCE FILE

Supplementary Information:

"Effective Cough"

Handout:

"Control Your Cough"

PROBLEM: Knowledge Deficit, Medications (Meds)

Immediate Care

Review of meds--preferably at time of taking.

Answer questions.

Check occurrence of physical symptoms which may result from meds.

Follow-up

Ask for medicine rundown from patient.

Suggest patient share med information with family member.

If patient indicates financial problems which may prohibit prescription refill, refer to social services before discharge.

Teach Important Points

Explain purpose of each med.

Discuss any special directions for when to take/with or without food, etc.

Explain possible common side effects--reassure and give suggestions to minimize.

Discuss ways to remember to take medicine.

Stress importance of doctor's dosage and instructions and the importance of telling the primary doctor when taking meds not prescribed by him.

Discuss over-the-counter drugs used by the patient.

RESOURCE FILE

Supplementary Information:

"Summary of COPD Medications"

Read Chapter 7, AHA Manual for Teaching Patients About Chronic Pulmonary Diseases.

Handout:

"What Are You Taking?"

PROBLEM: Knowledge Deficit, Use of Inhalers (Inhalers)

Immediate Care

Demonstrate inhaler use.

1. Shake unit & hold upside down.
2. Breathe out slowly through pursed lips.
3. Place mouthpiece in mouth and start slow inhalation.
4. Press dosage release while continuing to breathe in.
5. Remove mouthpiece and hold breath, 2-3 seconds.
6. Exhale slowly through pursed lips.

Follow-up

Ask for return demonstration at medication time.

Teach Important Points

Explain the purpose of the inhaler medication.

Stress correct dosage and problems of overuse.

Give care tips--store cool
--wipe mouth area and cap before storing.
--wash once daily in hot water.

Explain number of doses and how to plan for refill.
--check by counting, shaking, or floating inhaler in water.

Discuss possible unusual reactions and when to inform physician.

Caution not to open canister or incinerate

RESOURCE FILE

Supplemental Information:

May 1983 Nursing, "Help Your COPD Patient Take a Better Breath--With Inhalers"

Handout:

"Tips on Inhalers"

PROBLEM: Diet/Weight/Stomach Upset (Diet)

Immediate Care

Ask about eating habits and problems

If nausea or pain, check for possible reasons--medication upset.

Isolate problem
- --appetite
- --weakness
- --gas formation
- --over or underweight
- --short of breath at means

Refer dietary as indicated.

Follow-up

Check for improved situation

Teach Important Points

Importance of good nutrition
- --how to check nutrition daily (Handout)

Eat 4-5 small meals instead of 3 large.

Avoid gas-forming foods (this is often individual)

Need for potassium foods if on diuretic.

Use bronchodilators at least one hour before eating.

If applicable, relate medications and food indicates or contra-indications.

Stress importance of fluid intake.

RESOURCE FILE

Handout:

"Eat to Feel Better"

PROBLEM: Decreased Physical Activity (Activ.)

Immediate Care

Check physician restrictions.

Discuss patient's feelings about walking or other exercise.

Work out an exercise plan and encourage trying.

Solicit family support.

Follow-up

Check on progress.

Encourage.

If appropriate, check with physician on referral for portable oxygen.

Teach Important Points

Continued exercise and activity are vital to maintain independence, even with limitations.

Shortness of breath during activity can be helped by learning some breathing patterns. (Handout)

Start slow and easy and gradually increase; aim for mild fatigue (spring back time 10-15 min). Do not push to limits--plan resting pauses.

Once home it is important to wash and dress every day and carry out a planned exercise program.

RESOURCE FILE

Handout:

"Build Your Strength"

"Ways to Save Energy"

"Body Mechanics and the Pulmonary Patient"

"Mobility Exercises"

Supplementary Information:

"Energy Conservation"

PROBLEM: Sleep Pattern Disturbance (Insomnia)

Immediate Care

Massage neck and shoulder muscles--assist with position change.

Help practice relaxing exercise.

Ask patient what relaxes them.

Talk a few minutes--find out about daytime activity.

Follow-up

Check on relaxation practice.

Suggest that a patient teach technique to family member.

Teach Important Points

Relaxation exercise: Handout

Explain problems of tension on breathing muscles.

Important to practice relaxation 5-10 minutes daily not just when tense.

Stress regular activity during the day and regular time and routine for going to bed.

Discuss sleeping medications, problems and possibilities.

Help patient understand sleeping patterns are individual--help them accept their own rhythms.

RESOURCE FILE

Handout:

"Insomnia"

"Contraction and Relaxation of Muscle Groups"

PROBLEM: Psychosocial Disturbance (PsychSoc)

Immediate Care

Look past the anger or depression to the loneliness and fear.

Assess effects of O_2 lack and CO_2 retention.

Touch and listen.

Let the patient know you recognize the battle to breathe and that you care.

Assess family rejection or overprotection.

Follow-up

Check in to reassure even though patient is able to care for his own needs.

Teach Important Points

Help patient understand that shortage of oxygen often changes feelings.
- --decreases patience
- --causes irritability and nervousness.

Help patient recognize signs of short temper, nervousness and irritability.

If appropriate, suggest new interests or hobby exploration.

Reassure about patient's importance to family even if role is changing.

Teach relaxation of muscle groups.

Teach quieting reflex.

RESOURCE FILE

Supplementary Information:

"The Psychosocial Problems of the COPD Patient"

"Talking with Patients"

"Relaxation"

Handout:

"Quieting Reflex"

"Keep Living Your Life"

"Contraction and Relaxation of Muscle Groups"

PROBLEM: Knowledge Deficit, O_2 Use

Immediate Care

Reassure about O_2 safety.

Help adjust for comfort.

Check ability to get to bathroom.

Ask for concerns or questions.

Follow-up

Check on comfort.

Give family handout if going home on oxygen and refer to discharge planning
- patient and family need information on care and maintenance.

Teach Important Points

Review oxygen safety & cautions.
- --combustible, not explosive
- --no smoking in room
- --use at prescribed flow setting as any controlled medication.

Most important times to use are when sleeping, eating, and exercising/explain why.

If appropriate, discuss choices for O_2 delivery systems for home use
- --reservoir
- --portable
- --concentrator
- --Venturi mask/cannula

RESOURCE FILE

Supplementary Information:

"Oxygen Therapy Equipment"

Read Chapter 8, AHA Manual for Teaching Patients about Chronic Pulmonary Diseases

"Oxygen Administration in the Home"

Handout:

"Myths and Truths about Oxygen"

"You and Oxygen at Home"

APPENDIX D
MEDICAL AND EDUCATIONAL REVIEW PANEL

EXPERT REVIEW PANELISTS

Panel of Medical Expertise

A. Jay Block, M.D., Professor and Chairman, Department of Pulmonary Medicine, University of Florida College of Medicine, Gainesville.

*Alberta Hipps, R.N., Nurse Director, Pulmonary Rehabilitation Program, Saint Vincent's Medical Center, Jacksonville.

Louise Jackson, R.R.T., Program Administrator, Pulmonary Rehabilitation Program, Saint Vincent's Medical Center, Jacksonville.

*Betty Burnette-Joos, R.N., M.Ed., Instructor and Director of Continuing Education, Department of Nursing, Lake City Community College, Lake City.

Nelda LeMaster, R.N., Pulmonary Home-Care Nurse Specialist, Visiting Nurse Association, Jacksonville.

Dennis J. McDonagh, M.D., Medical Director, Pulmonary Medicine Department, Saint Vincent's Medical Center, Jacksonville.

Linda E. Moody, R.N., Ph.D., Associate Professor, College of Nursing, University of Florida College of Nursing, Gainesville.

Dennis M. O'Donnell, M.D., Assistant Medical Director, Pulmonary Medicine Department, Saint Vincent's Medical Center, Jacksonville.

*Roslyn Reischman, R.N., M.S.N., Director of Critical Care Nursing, Saint Vincent's Medical Center, Jacksonville.

*Edna Rohrbaugh, R.N., M.S.N., Director of Medical Nursing, Saint Vincent's Medical Center, Jacksonville.

Panel of Experts

*Betty Burnette-Joos, R.N., M.Ed., Instructor and Director of Continuing Education, Lake City Community College, Lake City.

EXPERT REVIEW PANELISTS (continued)

Panel of Educational Experts (continued)

*Mary Ann Kontrick, Ph.D., Program Director, American Lung Association of Florida, Jacksonville.

Linda E. Moody, R.N., Ph.D., Associate Professor, College of Nursing, University of Florida College of Nursing, Gainesville.

*Edna Rohrbaugh, R.N., M.S.N., Director of Medical Nursing, Saint Vincent's Medical Center, Jacksonville.

Doctoral Committee

James W. Hensel, Ph.D., Committee Chairman, Professor, Instructional Leadership and Support, College of Education, University of Florida, Gainesville.

Margaret K. Morgan, Ph.D., Professor, Instructional Leadership and Support, College of Education, University of Florida, Gainesville.

Jill T. Varnes, Ed.D., Assistant Professor, Health Education, and Safety, College of Physical Education, Health, and Recreation, University of Florida, Gainesville.

Linda M. Crocker, Ph.D., Associate Professor, Foundations of Education, College of Education, University of Florida, Gainesville.

*Reviewed the patient-report questionnaire for content and construct validity.

APPENDIX E
PATIENT QUESTIONNAIRE

PATIENT INTERVIEW QUESTIONNAIRE

Introduction

My name is Frances Young, and I am a doctoral student at the University of Florida. I am working on a project in pulmonary patient education and I need your help. Would you be willing to take about 15-20 minutes to answer some simple yes or no questions which will give me some of the background information I need to complete my project?
Thank you.

The purpose of the questions is to help me find out what information about your illness is already being taught by the nursing staff. Your answers will not reflect on any individual nurse but will only give me some idea of what teaching is being done by the nurses in general. Your doctor, or someone from respiratory therapy or pulmonary rehabilitation, may have given you some of the information that will be mentioned in the questions, but I am only asking if the topic was discussed with you by one of the nurses. Just answer to the best of your memory of the past few days since you entered the hospital on this current admission. When you are finished, I will be glad to answer any questions you may want to ask about any of the topics or questions.

SOB 1. Are you sometimes short of breath? ___Yes ___No

Since being in the hospital has a nurse

___ (a) explained the need to relax and slow breathe to get stale air out of your lungs?

___ (b) shown you how to belly-breathe or do what is often called diaphragmatic breathing?

___ (c) helped you find the best body position for you when you are short of breath?

___ (d) shown you how to breathe out through pursed lips?

Cough 2. Do you have any problems with coughing? ___Yes ___No

Since being in the hospital has a nurse

___ (a) explained why you need to drink lots of water?

___ (b) shown you how to position yourself and cough to get up mucus?

___ (c) talked about cough medicines?

___ (d) explained the importance of watching for color change in the mucus you cough up?

Sleep 3. Do you have any trouble sleeping at night? ___Yes ___No

Since being in the hospital has a nurse

___ (a) given you some suggestions for better sleeping?

___ (b) talked to you about individual differences in sleeping patterns?

___ (c) discussed the importance of daily exercise as an aid to sleeping?

___ (d) talked to you about sleeping medications?

Inhal 4. Do you use any inhaler medications? ___Yes ___No

Since being in the hospital has a nurse

___ (a) shown you how to use your inhaler?

___ (b) explained the purpose of your inhaled medication?

___ (c) stressed the importance of correct usage and not overusing?

___ (d) given you some tips about storing, cleaning, and discarding your inhalers?

Diet 5. Do you have any special diet or eating problems? ___Yes ___No

Since being in the hospital has a nurse

___ (a) shown you how to check your daily diet for good nutrition?

___ (b) gone over your eating habits with you?

___ (c) explained about eating smaller meals and filling in with nutritious snacks?

___ (d) discussed the relationship of medications and possible eating problems?

Meds 6. Are you taking regular medications? ___Yes ___No

Since being in the hospital has a nurse

___ (a) given you the name of each of your medications and explained why it was prescribed?

___ (b) explained any special directions about when to take your medicines or possible precautions?

___ (c) stressed the importance of following the prescribed dosage and checking with the doctor about over-the-counter medicines?

___ (d) given you tips on how to remember to take your medicine?

Smk 7. Do you smoke? ___Yes ___No

Since being in the hospital has a nurse

___ (a) offered suggestions to help you quit smoking?

___ (b) explained the benefits of giving up smoking?

___ (c) given you the names of some organizations that have "stop smoking" programs?

___ (d) explained some of the effects of smoking on your respiratory problem?

Exc 8. Is your activity limited by your illness? ___Yes ___No

Since being in the hospital has a nurse

___ (a) helped you plan an exercise program for your needs?

___ (b) stressed the importance of daily dressing and grooming?

___ (c) explained any limitations or cautions about exercise?

___ (d) stressed the importance of daily activity?

Psych 9. Do you sometimes feel anxious, depressed, or irritable? ___Yes ___No

Since being in the hospital has a nurse

___ (a) explained that your problem getting oxygen may cause you to be short-tempered or irritable?

___ (b) talked about trying some ways to relax when you feel nervous, depressed, or tense?

___ (c) suggested getting involved in some new activity or hobby?

___ (d) talked with you about your family role and what changes may be needed?

Oxy 10. Has your doctor prescribed oxygen? ___Yes ___No

Since being in the hospital has a nurse

___ (a) given you some safety tips about oxygen use?

___ (b) explained the most important times to use your oxygen?

___ (c) stressed using oxygen only as prescribed by the doctor?

___ (d) talked to you about the different types of equipment for home use.

Thank you. Do you have any questions or want to discuss anything we have mentioned?

APPENDIX F
PARTICIPANT FOLLOW-UP REPORT

PARTICIPANT FOLLOW-UP REPORT

"COPD PATIENT EDUCATION"

- -

On the following list of COPD patient problems, please select, rank by occurrence, and mark 1 (most) to 5 (least) the five problems which, in your experience, are the most evident among chronic lung disease patients.

___ Diet/nutrition adherence

___ Incorrect inhaler use

___ Ineffective cough/airway clearance

___ Insomnia

___ Insufficient activity/ exercise

___ Lack of medications knowledge

___ Lack of oxygen use knowledge

___ Psychosoc./depression, anxiety, hostility

___ Shortness of breath

___ Smoking

On the list below mark 1 (most) to 5 (least) those problems that you feel the most uncomfortable in teaching related information. (Do not mark the five problems where you feel the most comfortable in teaching.)

___ Diet/nutrition

___ Inhaler use

___ Insomnia

___ Developing exercise regimen

___ Airway clearance

___ Medications

___ Oxygen use

___ Psychosocial problems

___ Shortness of breath

___ Smoking cessation

On the list below select and rate 1 (most) to 5 (least) the five primary reasons that you believe cause staff nurses to have difficulty in teaching patients.

___ Concern about physician reaction or resistance

___ Lack of time

Participant follow-up report (page 2)

___ Lack of standardized procedures

___ Not knowing what to teach

___ Patient disinterest or resistance

___ Lack of training in "teaching" skills

___ Teaching is given a low priority by administration

___ Other ____

Check one of the blanks in each of the following:

During the past 4-6 weeks my number of teaching interventions has

- ___ increased to a large extent
- ___ increased somewhat
- ___ remained about the same
- ___ decreased

During the past 4-6 weeks the quality of my patient teaching has

- ___ improved considerably
- ___ improved somewhat
- ___ remained about the same
- ___ decreased

Please rate your personal evaluation of your own patient teaching.

Circle one number on each of the following:

Feel very comfortable when teaching	5	4	3	2	1	Feel uncomfortable in the teaching role

Participant follow-up report (page 3)

Teach regularly and consistently	5	4	3	2	1	Seldom, if ever, teach
Document teaching consistently	5	4	3	2	1	Seldom, if ever, document teaching

Suggestions or Comments on Patient Teaching:

Please rate the "COPD Patient Education" program and materials.

Circle one number on the following:

I found the mini-module cards to be

Valuable 5 4 3 2 1 No Help

I found the resource materials to be

Valuable 5 4 3 2 1 No help

I found the self-instructional "Teaching-Learning" module to be

Valuable 5 4 3 2 1 No help

I found the orientation workshop to be

Valuable 5 4 3 2 1 No help

Participant follow-up report (page 4)

The COPD program and materials have increased my awareness of the importance of patient education

To a large extent 5 4 3 2 1 Not at all

The COPD program and materials have helped me to improve my patient teaching

To a large extent 5 4 3 2 1 Not at all

Suggestions and Comments on the COPD Patient Education Program and Materials:

APPENDIX G
RESEARCH IN THE NATURALISTIC SETTING

RESEARCH IN THE NATURALISTIC SETTING

Conducting research in the naturalistic setting results in unusual problems and rewards. Although the site hospital for this study was used for a variety of cooperative programs for training and residency of medical professionals, it was only infrequently the site for independent research outside of those programs. This meant that there was a lack of clearly identified procedures for approval to conduct research. As a result, the investigator had to contact a large number of departments and individuals.

She made the first contacts with those individuals and departments directly involved in the investigation: the pulmonary rehabilitation nurse, the director of medical nursing, the patient education director, the pulmonary clinician, and the medical director of pulmonary medicine. Once she oriented these individuals to the purposes and methodology of the investigation, she had their assistance in getting the necessary approvals. They also arranged a meeting of the investigator with the charge nurses from the hospital's three general medicine nursing units that would be used as study sites.

Prior to initiation of the study, the investigator found it necessary to obtain individual approval from the director of nursing education, the medical director of the pulmonary medicine department, the director of patient education, the director of medical nursing, the vice president of operations, the vice president/nursing director, and the hospital administrator. She obtained these approvals through personal contact and letters of request accompanied by a letter of identification from the chairman of the investigator's doctoral committee. In addition to these official approvals to conduct research, the investigator was required to appear before a meeting of the hospital's medical staff of physicians and the Committee on Human Experimentation. Although the prospectus for the research served as the basis for review, the role and procedural involvement of the hospital was a prime concern and needed to be defined in detail.

Once the investigator received the official approvals, she received clearance to obtain the necessary credentials to work within the hospital environment and to review medical records, both at the nursing stations and in the Department of Medical Records. She contacted the Director of Admissions to explain the procedures to follow for admission of chronic obstructive lung disease patients onto the two study units. Any adjustment of admissions procedure was complicated by the frequent failure of the admissions diagnosis to identify those patients under study. In order to facilitate identification of the study population by staff of the Admissions Office, the investigator contacted the offices of those family practice and internal medicine specialist physicians most likely to be admitting the chronic lung disease patient and asked for special consideration in identification at the time of admission request. These initial steps required more than two months.

Once the study was initiated, collection of data from patient interview was frequently complicated by the unavailability of the patient. The investigator made an effort to interview each patient between 10:00 a.m. and 2:00 p.m., since this time appeared to be generally acceptable. This schedule was not always possible for a variety of reasons and the investigator sometimes had to make one or more return trips. Also, the design of the study called for the patient to be interviewed on the fifth day of hospitalization. This involved data collection seven days a week during the period of investigation.

The investigator conducted an orientation program for the entire nursing staff of the two units involved in the research. She conducted a two-hour orientation workshop for the experimental unit and a 15-minute orientation four times for the experimental unit and five times for the control unit as follows:

Experimental Unit	Control Unit
Day 1	Day 1
9:30 a.m.-11:30 a.m.	9:00 a.m.-9:15 a.m.
12:30 p.m.-2:30 p.m.	12:00 M-12:15 p.m.
	4:15 p.m.-4:30 p.m.

Day 2	Day 2
2:00 a.m.-4:00 a.m.	1:30 a.m.-1:45 a.m.
12:00 M-2:00 p.m.	4:30 p.m.-4:45 p.m.

The hospital provided release time for the nurses on the day (morning) and night shifts. The hospital paid "clock time" to the experimental unit nurses on the afternoon shift to attend the orientation and gave release time to the control unit nurses on the afternoon shift.

During any investigation in the naturalistic setting a variety of unexpected events or happenings may occur. These occurrences may or may not be relative to the study. Two specific events occurred during this investigation. In the final six weeks of the investigation the hospital began a major nurses' inservice education program on a total changeover of nursing record forms and procedures. This training began during the study period, but the new system was not implemented until after completion of the study. This training may have affected the patient-teaching performance of those nurses participating in the research study. The pressure of learning a new system, the nurses' time away from the floor, and the short-staffing that resulted during training periods could have inteferred with concentration on patient teaching. However, the new nursing records required a problem diagnosis format that coincided positively with the emphasis of the model under study.

The other event that may have affected the experimental study was the preparation for initiation of a new system for cost reimbursement of Medicare patients. This new system provided that Medicare payment to hospitals would be made according to the patient's diagnosis-related grouping (DRG) rather than according to the actual costs incurred. The emphasis of this new plan was to reward the hospital financially when a patient was discharged earlier than the calculated average. In anticipation of the major changes projected to accompany this new funding program, the hospital conducted a number of seminars and patient studies. The floor nurses were not directly involved in any of those activities, but the effect of the forthcoming program was a topic for discussion. The hospital staff frequently expressed concern over possible reductions in staff.

Throughout the research study the attitude of the staff nurses was open, friendly, and considerate. They showed minimal interest in the investigator's activities during the pretreatment phase of data collection. After orientation workshops were completed, the staff of both experimental and control units showed an increase in interest in pulmonary patients.

Certainly problems are inherent in doing research in the naturalistic setting of the hospital. However, the advantages of "testing" a product in the environment in which it will be used are obvious, and this investigator believes the advantages outweigh the problems. Furthermore, in the medical setting used for this study the investigator found a staff attitude of cooperation and support that measurably reduced the frustration that inevitably accompanies research effort.

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BIOGRAPHICAL SKETCH

Frances Ellsworth Young was born in Chattanooga, Tennessee, and spent her later childhood in Washington, D.C., where she graduated from Calvin Coolidge High School. She received a Bachelor of Science in home economics from the University of Maryland in College Park and a Master of Health Education from the University of Florida in Gainesville.

Mrs. Young's professional experience includes early employment as a home economist with the Washington Gas Light Company in Washington, D.C., and 12 years as a teacher of home economics, science, math, and health education in Miami, Fernandina Beach, and Jacksonville, Florida. From 1972-1982 Mrs. Young was employed by the Florida Lung Association in Jacksonville, Florida, in a variety of positions which included consultant for program development, director of community relations, director of the Northeast Branch Office, and director of professional education, research, and school health. Since 1982 she has been employed on a part-time basis as an adjunct instructor at the University of North Florida in Jacksonville and as a visiting assistant professor in health education with Extension Home Economics at the University of Florida's Institute of Food and

Agricultural Sciences in Gainesville. In addition, Mrs. Young is currently a health education consultant in private practice.

In 1982 Mrs. Young received an award of recognition from the Florida Lung Association, and in 1981 she was given the Joseph Y. Porter, M.D., Award for Outstanding Contribution to Health Education by the Florida Public Health Association's Health Education Section. In 1980 Mrs. Young was named the Outstanding Health Educator of the Year by the Florida Association of Professional Health Educators.

Currently, Mrs. Young is a member of the following professional organizations: American Alliance for Health, Physical Education, and Recreation; American Public Health Association; American School Health Association; Eta Sigma Gamma; Florida Association of Professional Health Educators; Florida Public Health Association; Phi Delta Kappa; and Society for Public Health Education.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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